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Packing a 5.9L Cummins, this '88 J20 on a '92 Dodge 2500 frame can really smoke 'em. Photo by Brotography PA.





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With diversity in New Jeep ownership it is no surprise to find Jeep Wrangler JK is sporting a softer rate spring for a softer ride. With this in mind Skyjacker[®] has created Soft Ride[®] Coil Kits to maintain OE ride of newer models while still meeting the challenges of off-road terrain of the preceding, still available, Rock Ready[®] Coils.

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TRAIL HEAD

Wide-open off-highway vehicle use all began to change in the '80s as one

after another of these favorite off-road-recreation areas were closed to visitors that had enjoyed them since childhood with family and friends. Huge previously open areas, especially in Western states, began to be closed to off-road activity of any kind. Large tracts of land (some more than 100,000 acres) were closed tighter than a whiskey barrel. Sometimes it was a single trail at a time. The uproar over these closures was loud and strong, and the fight to keep them open was tooth and nail, but rarely (and I mean almost never) were the closures halted.

At one point, it seemed as if one of the favorite pastimes of millions of Americans was being demonized. Off-roaders were painted as destroyers of precious wilderness, and the hobby we are so passionate about was often looked upon as almost criminal. However, off-road enthusiasts became savvy in the legal and legislative ways of the world and learned how to fight back against what were sometimes clearly abuses of the law and legislation.

In California, likely the hardest hit state with land closures, moves to gain back some of that access have recently been successful. An area of Glamis Dunes long locked up was just opened a year ago. A major portion of the Mojave Desert's Johnson Valley, famous for its extreme rockcrawling trails and home of the world-famous King of the Hammers (KOH) desert race, was rescued from closure and is open much of the year (a portion of the year is reserved for warfare training exercises) for recreational and competitive four-wheeling.

The day on which I wrote this editorial (October 8, 2015), it was announced that legislation had been introduced in the U.S. House of Representatives to set aside 300,000 acres of California desert for off-road activities and expand OHV recreation areas by as much as 60,000 acres. The new legislation will create five new OHV recreation areas in Southern California and prevent the president from designating national monuments within OHV and Special Management areas created and expanded in this legislation.

The Eastern states have struggled too, won some, and lost some. The recent closure of a few seashores to off-road driving has been frustrating, to say the least. In New Jersey, ORV use in the Wharton

Forest is threatened. The Ivy Branch trail system of the Hatfield-McCoy Trails was set to be closed just days after I wrote this, and it may be lost to ORV use by the time you read this.

The battle still rages in many parts of the country. At the Oregon Dunes National Recreation Area, long a popular Northwest region off-road playground, some trails have been closed to OHV use, and environmental activists lobby for even more closures. Some of the Oregon Dunes area has become overgrown with non-native invasive plants brought to the dunes to help control erosion and stabilize the shifting dunes. To help eradicate this non-native vegetation, local authorities have opened up certain areas and encouraged off-road activity to help eradicate the invasive vegetation. Of course, environmental advocates are unhappy with this invitation to help destroy invasive non-native vegetation and are protesting the practice.

This is both a celebration of success and a battle cry. We can't slack off now just because we think we're doing well. Complacency only leads to failure. Get involved or stay involved, and get loud. If you can pick up pen and paper or type an email to us, you can certainly do the same to your state senators and representatives. Make it clear you carry the most effective weapon in the land—your vote—and that they should pay attention to the passions of the millions of American off-road enthusiasts.

—Stuart Bourdon

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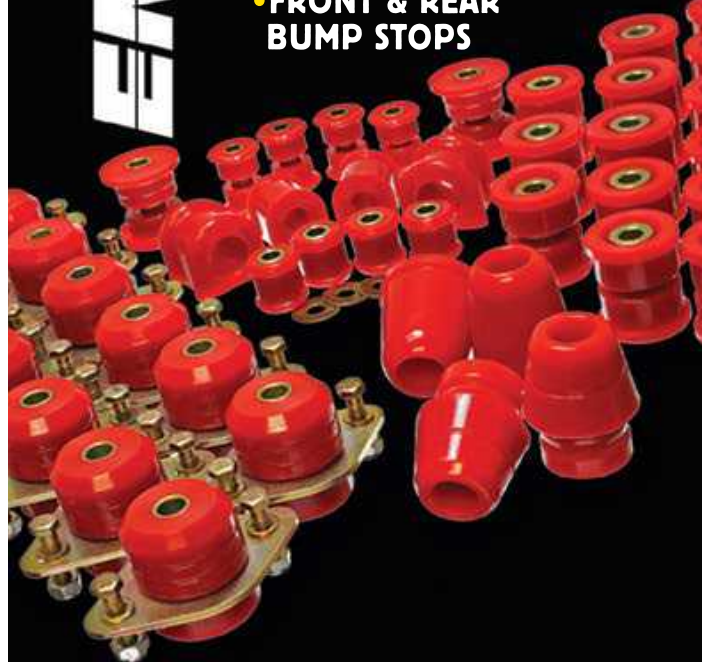
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MAILBAG

By John Cappa

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Wrangler Educator

My sincerest condolences on the passing of your friend, colleague, and fellow editor, Pete Trasborg. Yes, he will be missed by *Jp* readers too.

Having said that, I just read the Oct. '15 issue of *Jp*. I was astonished at your response to my letter (Mailbag). I still stand by my evaluation concerning the ludicrous nature of the *Consumer Reports* review. Examples:

1) The Wrangler they tested was the larger, heavier, four-door Unlimited; not the spritely, zippy two-door X model.

2) The tires were not proper off-road tires for the off-road test, but the Jeep gets criticized for losing traction going up a stone hill! Really?

It does no good to justify this *Consumer Reports* video as "chasing neophytes" away: If sales of the Wrangler hinged only on the off-road crowd, the bean counters at FCA may want to drop the Wrangler altogether in favor of the Renegade. Nobody wants that.

But more significantly, I feel that the time has come for *Jp* to acknowledge that Jeep Wranglers are, in reality, being used and loved for much more than the severe build-your-own, off-road, paramilitary machines. The title is *Jp*, not *Jp Off-Road*. And the tagline even says "All Jeeps"! However, that is, to a great degree, not what is being portrayed, with occasional exceptions.

Here are the uses I have seen for Jeep Wranglers in our snowy rust-belt area:

- 1) Daily driver: used for commuting, shopping, school, work, errands, and so on.
- 2) Off-road vehicle: used for unpaved, unimproved trails for exploration and adventure.
- 3) Sports car: used for sporty performance driving, spritely driving, or hot-rodding.
- 4) Touring car: used for trips, travel, and sightseeing.

5) Tow vehicle: used for towing boats, trailers, or campers.

6) Show car: used all polished up for car shows, parades, and concours contests (usually restored or vintage vehicles).

While I enjoy some of the build articles to make Jeeps climb Mt. Everest or ford the Atlantic, I would also like to see a much better balance among all the other functions that beloved Jeeps serve for their owners. And let's drop the snobbish attitude that real Jeeps are built, not bought. Nowadays, you can buy a fully loaded Rubicon that can scale the Washington Monument. Not everyone has the garage, time, or skills available for customizing, welding, or harvesting junkyard parts. I would also like to see some standard on-road performance testing as a regular feature. How about 60-0 stopping distances, acceleration from 0-60 mph, skidpad G-values, and perhaps some slalom speeds. Additionally, you could even do this testing in the mud or snow for even more interest!

In the late '70s when Enzo Ferrari chose to comment on American automobiles, he sampled or studied several we make. Ironically, he ran across a predecessor to the Jeep Wrangler and said, "This is truly America's only real sports car." Well, what did he mean by that, since the Corvette obviously existed? Was he trying to insult Corvette? We may never know for sure. Nevertheless, people who knew him believe he was referring to the robust, sporty, go-anywhere lifestyle that Americans live and that a Jeep matched it perfectly. He may also have been referring to that fact that the Jeep was a unique and somewhat goofy creation, whereas the Corvette was more conventional. But a humble Jeep Wrangler can hardly be considered a sports car by modern characteristics, right? Or can it?

There are indeed some common overlap features and measurements among a Wrangler, a Chevy Corvette, a Porsche Boxster, and a BMW Z4. However, there are also some significant differences that nominally would exclude a Wrangler from sports car-ishness.

Some of these include:

- 1) Center-of-mass height (COM): too high
- 2) Horsepower: too low
- 3) Skidpad cornering: too low

Since I belong to a Jeep club, I have learned that this remarkable vehicle is essentially a giant motorized Erector Set on wheels. If you need more off-road capability, you lift it, and change suspension, tire diameter, differentials, and links. This is commonly done.

But if you want a sports-performance Jeep, you lower it, change tires, and drop a Chevy small-block into the engine bay.

Look at the prices: The JK Wrangler started life in '07 at \$19,000, a huge bargain compared to the three others. So, if we add a Chevy small-block engine (\$3,500), some good highway tires (\$750),

a lowering kit (\$250), and cold-air intake and high-flow muffler (\$750) we get a total of less than \$27,000, including labor! That is a little over half the price of the others. So, we now have a JK Wrangler that gives 300 hp and 360 lb-ft of torque, has a COM height of 21 inches (almost the same as the Porsche Boxster), corners with a skidpad G-force of about 0.85 (no longer 0.62), rides smoothly on highways, soaking up tar-strips and expansion joints (a disaster for the BMW), all while preserving most of its great four-wheel-drive traction for winter and mild wheeling capabilities for off-road adventures.

Amazing isn't it? The little ugly American duckling can come through quite well with flying colors if proper and simple changes are made. Pity the poor BMW that pulls up next to that sleeper Jeep at the next red light.

Bernie Kressner
Appleton, WI

You've made some well-argued points that have been discussed many times in the pages of Jp during the last 20 years. During that time, many car-focused media outlets have blasted the different iterations of the Wrangler for being archaic and unwieldy. And compared to what they normally drive, quite honestly it is. Don't fool yourself into thinking Consumer Reports is the first and only company to ever chastise the Wrangler. The Wrangler is not a traditional car, and the more that people want it to be a traditional car, the more they will take from it that makes it the quirky and adaptable American 4x4 icon it is. Ironically enough, there are some people that believe this has already happened with the JK.

Currently, FCA sells pretty much every Wrangler they can roll off of the assembly line with very few incentives. The company certainly wouldn't discontinue or replace a successful platform with something completely different. Perhaps the biggest concern is the ever-increasing fuel economy and safety standards. These government-mandated restrictions will significantly change the Wrangler we all know and love. Get ready because it's coming sooner than later.

Jp is not Consumer Reports and never will be. We test and evaluate new Jeep vehicles the way those other car outlets won't because they can't. They don't have the same experience and understanding of the vehicle's capability as the Jp staff does. Ultimately, we offer something different than the other automotive media outlets trying to make their review more significant than the next one.

As an aside, your engine swap cost estimate for a JK is significantly low. The cost for things like a new transmission, ECU, motor mounts, cooling, exhaust, wiring, and other bits adds up quick. Most complete JK Wrangler V-8 engine swaps hover around \$25,000 to \$30,000, including labor.

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Thanks!

I just got the Oct. '15 issue and read about Pete Trasborg. I was very sad to hear of his passing. He was far too young to leave this world. I can only hope he is driving his favorite Jeep someplace awesome. I have been a *Jp* subscriber now close to four years and love it very much. I am disabled, so I do a lot of reading. Thanks for a great mag. Here's my rig: a '00 Wrangler I call Black Betty.

*Steve Gillmore
Via email*

Gimme More Crap

Keep the crap coming! I am a 59-year-old Jeoper. I have probably owned more Jeeps, have more Jeeps sitting in the woods, and sold more Jeeps than you writers write about. Some people call me Mr. Krab Butt or Mr. Grouch because

I usually tell it like it is. I don't read your magazine because of the funny articles, the Jeep pictures, or even the Jeep chicks. I read your magazine and have for several years because it's the only all Jeep magazine out there! That is what a real Jeep person wants to see and read about! So keep the crap coming. And if I get tired of it, I can always use it to take a crap.

*Mark McFarland
Bloomfield, IA*

Hail to the Chief

Regarding "Colossal Concepts" (Sept. '15), of all the vehicles I could wish for, this is it. The Chief is beautifully done! I bought a Cherokee Chief S in 1979 after swearing I would never be caught unprepared again after the blizzard of 1978. Since then, I have always had a four-wheel-drive truck or



Jeep. My favorite by far was that all-black Chief S with its 360ci V-8, Quadra-Trac transfer case, lockers, winch bumper, 8,000-pound Warn winch, and 33x12.50 tires. Since 1979, besides trucks, I have owned three Cherokees and a '03 Wrangler Rubicon. All have been played with. My daily driver is an '01 model with 225,000 miles on it. I've installed a 4-inch lift, rock sliders, and a bull-bar bumper with a 9000-pound winch among other things. I need to start looking for its replacement. I'll probably look for another '00 or '01 model with 125,000 miles or less. They are awesome vehicles. By the way, my Jeep was the only vehicle on the road in New Hampshire during our last blizzard.

The point of the email is I want The Chief! Its design is stunningly perfect. The pedigree on a Wrangler chassis is outstanding. Sign me up. Apply pressure and get it made.

*Peter Crutchley
Via email*

Subscription Service

I was just wondering how long it takes to get the magazine subscription set up. I have had my *4-Wheel & Off-Road* subscription for a while and signed up for *Jp* at the '15 TDS Desert Safari booth, yet I haven't received any issues.

*Erik Norgard
Via facebook.com/jpmag*

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2018 Wrangler Pickup Pricing


Regarding "A Jeep Pickup is Coming" on fourwheeler.com. The big question is will Jeep go small and inexpensive to compete with the growing midsize pickup market dominated by the Toyota Tacoma and GM Colorado/Canyons and make a less

expensive Wrangler Pickup? Or will Jeep go big and expensive so we get a \$45,000 base price Wrangler pickup? I will not be able to drop \$50,000 to replace my JK Unlimited with a Wrangler pickup. At that price, I would get a Ram Power Wagon.
Jim Stock
Via [facebook.com/jpmag](https://www.facebook.com/jpmag)

Oil Identity

First, I really like Jp. "Drowning in Oil" (July '15) is aimed at beginners but seemingly fails to note fluid recommendations for either automatic or manual transmissions. The author states his Jeep is a '11 Rubicon and then lists different capacities for front and rear axles. I'd hate to see a new reader put the wrong fluid in the transmission or under fill a differential. Other than that, keep up the nice magazine.

Rick
Via email

You're right! However, from looking at the images, the Jeep in the story clearly has a manual transmission. An automatic transmission has a removable oil pan. Anyway, the 42RLE four-speed automatic transmission found in the JK Wrangler requires about four quarts of Mopar ATF+4 transmission fluid or equivalent when doing an oil change. Don't forget to install a new filter kit as well. 

Write Us!

Got a question or comment about Jp magazine or the village idiots at the helm? Drop us a line. Don't forget to include your full name and where you're from or we'll make fun of you. Actually, we may make fun of you anyway. Keep it short and to the point or we'll hack and chop your letter as we please. We get a lot of mail, but we read every letter. Unfortunately, we can't print or personally answer every request. We're too busy surfing the Internet on the company dime. Digital images should be no less than 1,600 by 1,200 pixels (or 2 megapixels) and should be saved as a TIFF, an EPS, or a maximum-quality JPEG file.

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By **Tori Tellem**

jpeditor@jpmagazine.com

Jeep News & Rumors

- Aluminum Wrangler body like the Ford F-150's? Not so fast. The upcoming new Wrangler will have a new suspension, and that's probably where you'll see more aluminum.
- Cherokee production will be moving so that Wrangler can take its spot. The extra room for production capacity is why it's all sounding pretty positive for a diesel and a pickup, ripped from everyone's long-suffering wish list.
- PUG: Slang for the Pentastar upgrade.
- The Popemobile for the U.S. visit? It was a Wrangler. Secretly modified papal-ly.
- The '16 Sahara will have a few minor changes, including modified 18-inch rims and a body-colored bumper applique.
- Is the Jeep Grand Cherokee Trackhawk with the Hellcat engine going to see 0-60 in 3.5 seconds?
- Heard about this? A student at Texas State University got her license suspended for DWI, so she began driving around campus in a pink Barbie Jeep. Yes, the toy kind.
- The most Instagrammed automotive brand title goes to BMW, but right behind it is Jeep. The study of 4.6 million posts between January 2011 and July 2015 was done by the Auto Insurance Center.



Reader Quote Without Story*

*As seen on *Jp's* Facebook page



Brad Dorflinger Too bad all these turds now a days don't go for function in and on their jeeps but add stupid flashy light bars, rims and those ridiculous headlights. If it looks Tough rolling to the mall that's all that matters now.

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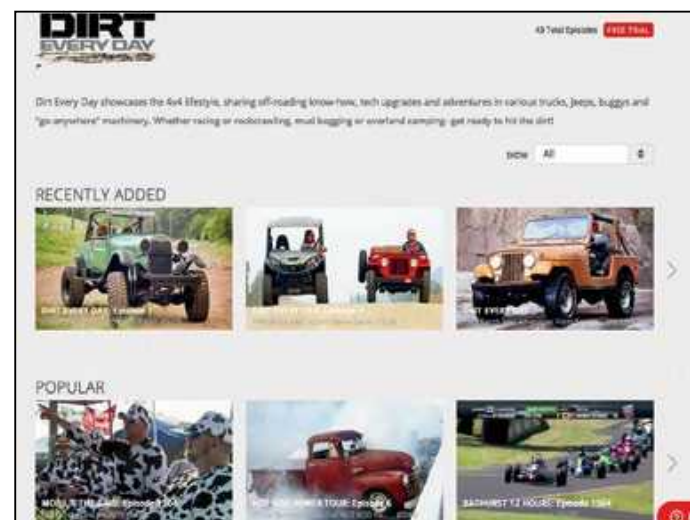
Quote Without Story

"Gator hunting with a GoPro for the first time, the selfie failed."

—Alex Lopatnyuk on a YouTube post of the video "Jeep GoPro Selfie Fail & Aftermath," which involved a Jeep, a selfie stick, and a canoe.

Industry News

- Suspension-maker Air Lift Co. has expanded its HQ by 40,000 square feet.
- Preownedengines.com now has 2.5L engines for the Grand Cherokee.
- *Motor Trend OnDemand* subscription video service has started. You'll have access to more than 1,000 hours of everything from motorsports and event coverage to documentaries and historical info to original series like *Roadkill* and *Dirt Every Day*. Go to motortrendondemand.com.



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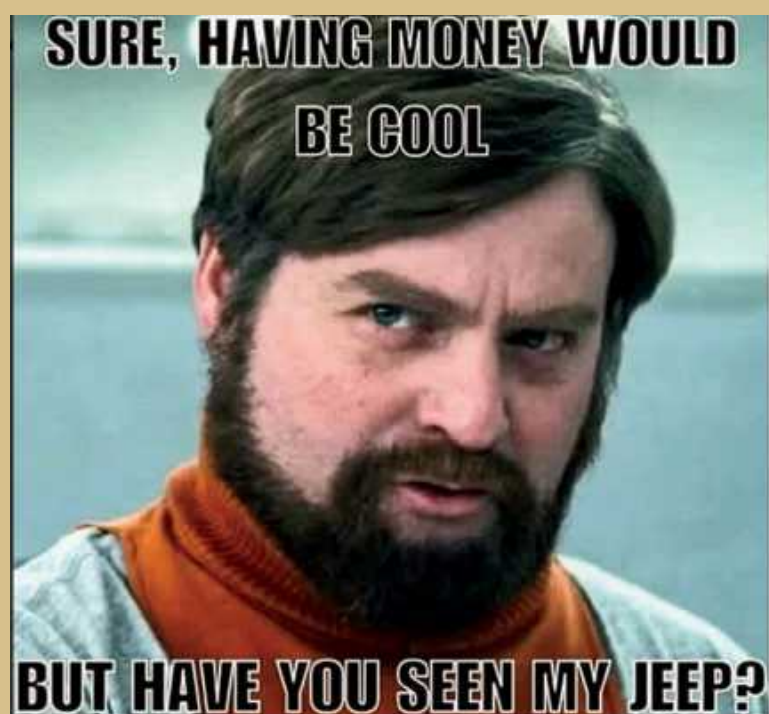
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Jeep-People @Jeep_People · Sep 12

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Twitter: @jeep_people



Auto Graphs

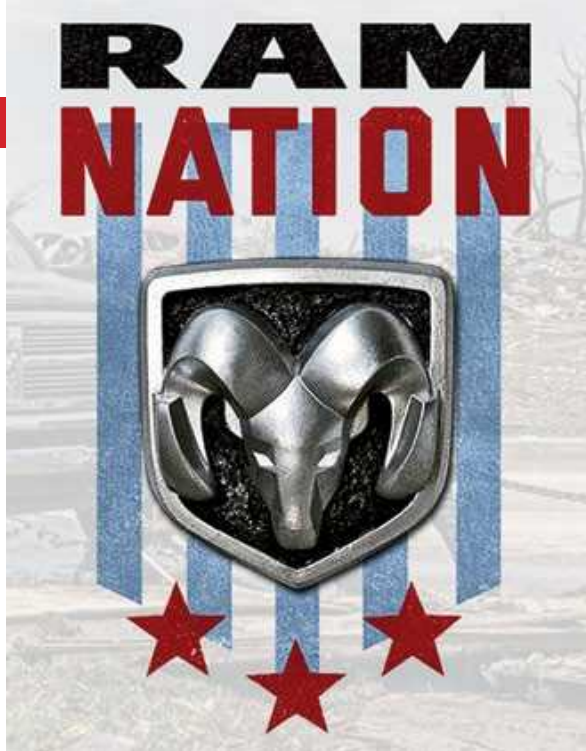
- What has replaced the Jeep and Hummer as the new Army (and Marines) vehicle of choice? It's the Joint Light Tactical Vehicle, which Oshkosh won the contract to build, a deal worth \$6.7 billion.
- Is Fiat/Chrysler moving all car production to Mexico?
- Fixed-gear bikes are either effing up Google's self-driving vehicles or proving to be safer than any human driver on the road. Seems a cyclist doing a track-stand at a stop caused the auto car to panic that the bike was actually moving and it proceeded to go and stop every time the bike seemed to move from the rider keeping his balance. It decided to err on the side of safety.
- Ram has launched Ram Nation Volunteer Corps, which allows Ram owners and dealerships to help out in disaster relief and community service. Join or learn



Quote Without Story 2

"I'm sincerely hoping you will enjoy this 3D printed Jeep with tank tracks controlled by android phone! The construction is very simple, varying from one to two days to fully print and build it!"

—Nico3DPrinting, on the directions listed on Thingiverse.com for "Jeep with tank tracks."



more at ramtrucks.com/ramnation.

- Are you for serious, Edmunds.com? The Pontiac Aztek is making a comeback because of millennials? We tend to think it was Breaking Bad that deserves the credit.
- On that note, also making a comeback: Volkswagen Microbus. A new one.
- GM's Technical Center in Michigan has been deemed a National Historic Landmark.
- Have no idea how to share roads with wildlife? Apparently you aren't alone, since Traffic Injury Research Foundation and State Farm Canada have created the Wildlife Roadsharing Resource Centre, which is described as "a hub of sound information that contains a mix of research, information, and tools designed to increase knowledge and bridge gaps in the field, and create a common understanding of the problem to strengthen efforts to reduce it." So tips like, "Ask passengers to watch for wildlife and give specific observations such as, 'deer on left.'" Educational and fun.

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DISPATCH



New 2016 Wrangler Black Bear

The '16 Jeep Wrangler is getting a Black Bear Edition. It's what happens when you take a Sport and add a topographical Black Bear Pass Trail hood decal, rock rails, and other odds and ends like black taillight guards and accents inside, but do not add a bear.

Where the Jeeps Are

Have an event? Let us know! Remember the magazine needs about four months of notice. Just follow these steps:

- Name of event:
- Date(s) of event:
- City/State of event:
- Venue for event:
- Website for readers to learn more about your event:
- Why your event is cool in five words or less:
- Have a high-resolution photo from a previous event? Feel free to send it to us and we might just include it.
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San Diego 4 Wheelers Superstition 18

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Mopar'd Jeeps

Mopar done did up a Jeep Cherokee and a Wrangler Rubicon into rolling billboards of Mopar accessories and parts. Exhibit A is the Cherokee KrawLer; the K and L go full circle to the KL designation of the Cherokee. It's based off a Trailhawk and has been lifted with a special Mopar suspension and has wider fenders, skidplates, and rock rails. Exhibit B is the Wrangler Rubicon Sunriser—pretty much a showcase of the color orange. However, avert your eyes and you'll also notice Mopar pieces, such as bumpers with a double tow hook, a suspension lift, half-doors, and LED lights between the A-pillar and windshield.




Get in Jp Magazine

Help us put together our Sideways department! Send us stories and photos for:

Stuck/Flopped/Rolled: How come none of you are sending us photos and stories for this version of Sideways? Are you all staying on baby trails? Where are photos of cool carnage and stuck Jeeps?

Vintage and Military Jeeps: We like old-timey and military things. Please us with a pic, story, names, Jeep.

In addition to the words, here are the photo requirements:

- Maximum-quality JPEG, BMP, or TIFF file.
- No less than 1,600 by 1,200 pixels (about 2 megapixels).
- No PDFs or other formats. We just can't use them in the magazine.
- Email the materials to jpeditor@jpmagazine.com with the subject line: Sideways. 

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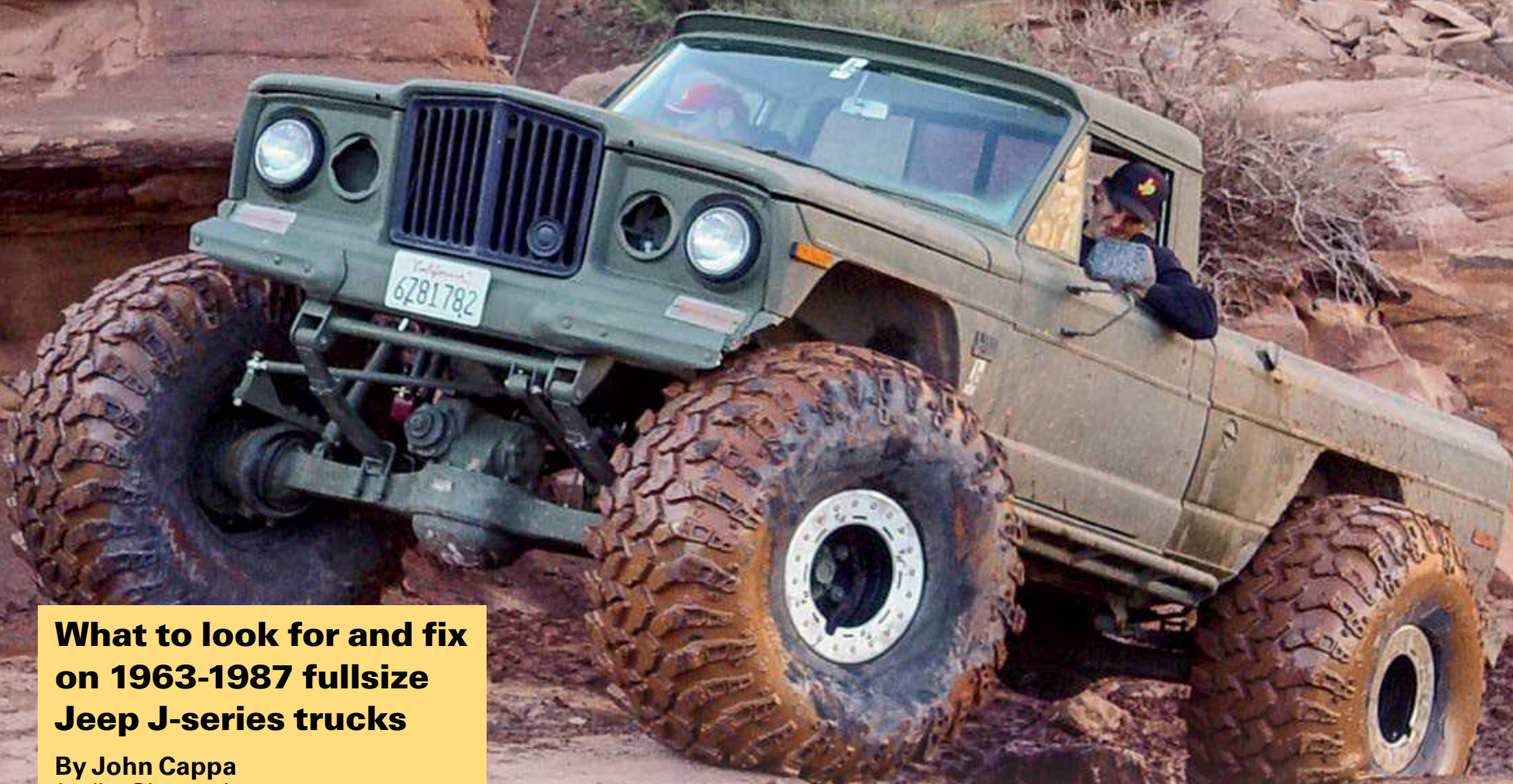
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BE A PART OF THE LEGEND

FSJ PICKUP GUIDE



What to look for and fix on 1963-1987 fullsize Jeep J-series trucks

By John Cappa

jpeditor@jpmagazine.com

Photography: John Cappa

Few pickups garner the same attention and respect as a '63-'87 fullsize Jeep J-series

truck. These trucks aren't exactly rare, but they are certainly uncommon, especially in the Rust Belt of the United States. They came in many different GVW ratings, wheelbases, and derivatives over the years. Thriftside, Townside, stake beds, and even a chassis-cab version were made available. There were many different drivetrain and suspension changes over the years, so not all FSJ trucks are desirable for off-road use.

The '63-'70 Gladiator trucks are considered the most collectable, but they have many disadvantages over the newer J-trucks. If you are interested in turning your FSJ pickup into a simple, multi-purpose, reliable trail rig and daily driver using mostly bolt-on parts, then you'll likely want to steer clear of the '73 and earlier trucks. They feature a less-desirable post-mount suspension, drum brakes, and a weaker closed-knuckle Dana 44 front axle that doesn't turn

very sharp. Some of the early engines are less desirable as well, namely the 230ci Tornado inline-six and 327ci Vigilante V-8. They can be unreliable and difficult to find parts for. The later 232ci inline-six, 258ci inline-six, Buick 350 V-8, and the three AMC V-8s (304 ci, 360 ci, and 401 ci) are far better powerplants with lots of aftermarket support. The best bang for the buck can be found in the '74-'79 pickups, although the '74 model has some oddball suspension bits. The '80-'87 trucks have more modern amenities, but they are choked down with low-horsepower engines, smog equipment, and they often have wiring gremlins. All of these issues can be remedied, but it is something to consider. If you plan on hacking out the engine, transmission, suspension, and axles, then any J-truck will do. However, keep an eye out for rust, which is commonly found around the windshield frame and on the floor panels among other areas. Severely rusted trucks should be avoided. There are some new replacement body panels available from companies like BJ's Off-Road

(bjsoffroad.com). It also offers new J-truck seals and other trim and interior bits. For larger and more-difficult-to-find used items, you can try Montana Overland (montanaoverland.com).

Lots of different transmissions were available in the J-trucks over the years, many are not notable. The most durable and desirable optional transmissions include the GM TH400 (optional from '65 to '79) and Chrysler TorqueFlite 727 (from '80 to '87) three-speed automatics and T-18 (from '68 to '87) four-speed manual with a 6.32:1 First gear. All three of these transmissions have a great reputation and are capable of handling far more power than the engines they came behind.

The available transfer cases were sort of ho-hum. Look for the part-time cast-iron gear-driven Dana 20 in trucks up to '79 and the aluminum chain-driven NP208 in '80 and later trucks. The optional full-time transfer cases can be problematic if worn out or filled with the incorrect fluid. Both are extremely common. Here are some more suggestions for upgrading the J-trucks.

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The stock closed-knuckle Dana 44 front axle found in '63-'73 J-trucks doesn't offer much strength, braking, or steering angle. It's fine for collectors, but for those that want a trail truck with a front locker, you're better off swapping it out or starting with a '74 and newer J-truck with an open-knuckle Dana 44 front axle. The open-knuckle Dana 44 front axle enjoys tons of aftermarket support in the form of gears, lockers, heavy-duty axleshafts, and more.



The Dana 20 transfer case found in many J-trucks can be upgraded with an Advance Adapters (advanceadapters.com) 32-spline rear output. The stock 10-spline output is susceptible to failure under heavy loads or if the driveshaft binds.



For bigger tires and off-road use, it's a good idea to replace the spindle bolts on the closed-knuckle Dana 44 with open-knuckle Dana 44 studs or quality 1 1/4-inch-long 3/8x24 button-head bolts. Minor machining is required to fit the hardware from the backside of the knuckles. This modification helps keep the spindles from blowing off of the knuckles in abusive off-road conditions.



The closed-knuckle Dana 44 front axle came with drum brakes. It can be upgraded to discs using common CJ hubs and vented rotors along with Dana 44 caliper brackets. Some grinding for caliper clearance is required and steering angle becomes even more limited. The calipers will make contact with the shock mounts if you don't properly adjust the steering stops.



None of the transfer cases that came in the '66-'87 J-trucks are excessively beefy. For heavy off-road use and tires over 35-inches tall, you might consider swapping in an Advance Adapters Atlas. This aftermarket transfer case is easily adapted and fits well in the J-trucks. It's available in many different low-range ratios to match your off-road needs.



Most J-trucks came with the durable 30-spline semi-floating Dana 44 rear axle with flanged axleshafts. However, some early-to-mid '70s J-trucks came with 35-spline semi-floating Dana 60 rear axles. Full-floating 8-lug 30-spline Dana 60 rear axles (pictured) were available on the heavy-duty trucks. There is lots of aftermarket support available for the J-truck rear axles.

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The '63-'73 trucks feature a less-desirable post-mount suspension design. Aftermarket suspension lifts are very limited. However, Hell Creek Suspensions (hellcreeksuspensions.com) offers front and rear 4-inch lift springs for post-mount trucks.

The '75 and later J-truck suspension has an abundance of aftermarket support. Front and rear leaf springs and lift kits up to 6 inches are available. Companies like Skyjacker (skyjacker.com) offer complete lift kits with U-bolts, shocks, extended brake lines, and a drop pitman arm.



The steel fuel tanks in the early FSJ pickups are usually full of filter-clogging rust. MTS (mtscompany.com) offers polyethylene replacement fuel tanks for nearly every J-truck model. The company also has new fuel sending units and hard-to-find filler hoses.



The AMC 360ci and 401ci V-8s are by far the best engines that came in the J-trucks. However, they still have some issues. The factory ignition is completely anemic and problematic. Performance Distributors (performedistributors.com) offers a Davis Unified Ignition (DUI) that replaces the entire wonky AMC ignition system. It's basically a GM HEI distributor that has been machined and custom tuned to work in an AMC V-8. The performance difference is like night and day.



Unfortunately, J-trucks were discontinued before factory fuel injection became common. The good news is that there are many aftermarket fuel-injection systems available from companies like Edelbrock (edelbrock.com), FAST (fuelairspark.com), Holley (holley.com), Howell EFI (howellefi.com), and Professional Products (professional-products.com) to help improve fuel economy and off-road performance at any angle.

Some purists hate the idea, but cutting off the fender flares on the J-trucks provides a lot more room for bigger tires. With a 4-inch lift and removed flares, you can easily fit 37-inch tires on a '63-'87 J-truck. 🇺🇸



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KEVIN'S KOOL

This 1964 flatbed Jeep J200 uses a GM V-8 to haul its home-built camping trailer through the Arizona outback

By Jim Brightly
jpeditor@jpmagazine.com
Photography: Jim Brightly

For those of us who are from a pre-Prius era, the sweet sound of a small-block Chevy

V-8 pushing its exhaust through a pair of glass packs returns us to our youth. It takes us back to when it was still cool to leave black patches on the pavement and create rooster tails of sand.

The sight of this custom-built J200 flatbed pickup, owned by Kevin Lake of Golden Valley, Arizona, with its old-fashioned narrow grille and pie-plate dummy covers (a great place to mount driving lights, by the way), can take you back to the good ol' days of the '60s and '70s as well. When it's crawling up Arizona's trails on BFGoodrich 37x12.50R17 All-Terrain KO2 tires,



KRAWLER

10x17-inch beadlock 8-lug wheels, and ¾-ton axles (Dana 44 front and a Corporate 14-bolt rear), Lake's full-framed, flatbed Jeep J200 looks like something straight out of some post-apocalyptic movie, especially with its Rustoleum sand-tan paint job.

However, once he fires up its 350ci GM V-8 with factory TBI, you immediately know it's not some cobbled-together

futuristic paramilitary truck running on homemade gasoline. It's a fire breathing, trail-romping go-getter that's capable of conquering any trail Lake points it at, and it can do it while towing its custom-built camping trailer, too.

Chassis and Cab

The '64 J-Series pickup cab now rests on a '77 Wagoneer frame because of the

HARD FACTS

Vehicle: '64 Jeep J200 custom flatbed

Engine: GM 350ci V-8

Transmission: TH350

Transfer Case: NP205

Suspension: Wagoneer frame; GM ¾-ton leaf springs

Axles: Dana 44 front with ARB Air Locker, GM 14-bolt rear with Detroit Locker; 5.38 gears

Wheels: 10x17-inch 8-lug beadlocks

Tires: BFG 37x12.50R17 All-Terrain KO2

Built For: Trails, camping, and fun

Wagoneer's shorter wheelbase (Lake built all the custom body mounts). Not having an OEM bed available that was short



KEVIN'S KOOL KRAWLER



enough to fit on the Wagoneer frame, Lake built his own flatbed out of channel steel and wood planks.

On that flatbed, Lake carries his spare tire, Hi-Lift jack, air hose on a spring-loaded spool, air tank, a large insulated water cooler, two toolboxes, and a hand-operated crane to lift the spare tire on and off (rolling the tire off the chest-high flatbed could cause

problems). A small wooden stake-side keeps random coolers or camping gear from being lost along the trail.

Knowing that at some time in the future the J200 may suffer a condition of upset, Lake made the decision to install an external rollcage (space inside the cab was also at a premium). With his own mandrel bender, he spent weeks designing and constructing the impressive

rollcage that protects the cab and front clip of the Jeep truck. The rock rails are also tied into the cage and frame for additional strength and stability.

Even though he built the J200 to be trail-tough, it has a soft side, too. Lake didn't forget to provide amenities for himself and his passengers. Modern niceties include power windows (from a junkyard Wagoneer), lighted cosmetic mirrors on

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KEVIN'S KOOL KRAWLER



Trail Shadow

In order to extend his exploring expeditions, Lake also designed and built a matching camping trailer. It's a military-style trailer with squared-off fenders and a narrowed J-truck tailgate. The trailer's track, with Chevy leaf springs and a Corporate 14-bolt axle, was designed to match the J200 so that it would tow easier over soft and unstable terrain, while following in the Jeep's tire tracks. In order to expand the trailer's capabilities, Kevin also built a tilt-bed for it, which is hinged at the rear with a 12V DC winch-cranked crane up front for lift.


the sunvisors (found in a Cadillac at the same yard), and a high-volume under-dash air conditioner that'll freeze your knees.

Axles and Suspension

Strapped to the Wagoneer frame via four Chevrolet ¾-ton pickup leaf springs are a ¾-ton Dana 44 front axle and a Corporate 14-bolt rear axle, and both are equipped with 5.38:1 gear ratios. The Dana 44 puts power to the ground through an ARB air locker and Alloy chromoly axles. Under the flatbed, the 14-bolt rearend pounds out the horses through a Detroit locker and factory axleshafts.

Planted Power

The GM 350ci V-8 with a factory throttle-body electronic fuel injection spins the locked-up torque converter in the TH350 automatic transmission. A twin-stick New Process 205 transfer case divides power between the front and rear axles.

So how well does this custom-designed and personally built Jeep pickup work? As you can see in the photos, it works very well indeed. The stable and strong suspension might be old school, but it's been around for decades because it's reliable. Besides, how cool is a powerful Jeep with storage capacity that can wheel like a champ and haul an off-road trailer? 



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Part 6: Quick-ratio power steering conversion

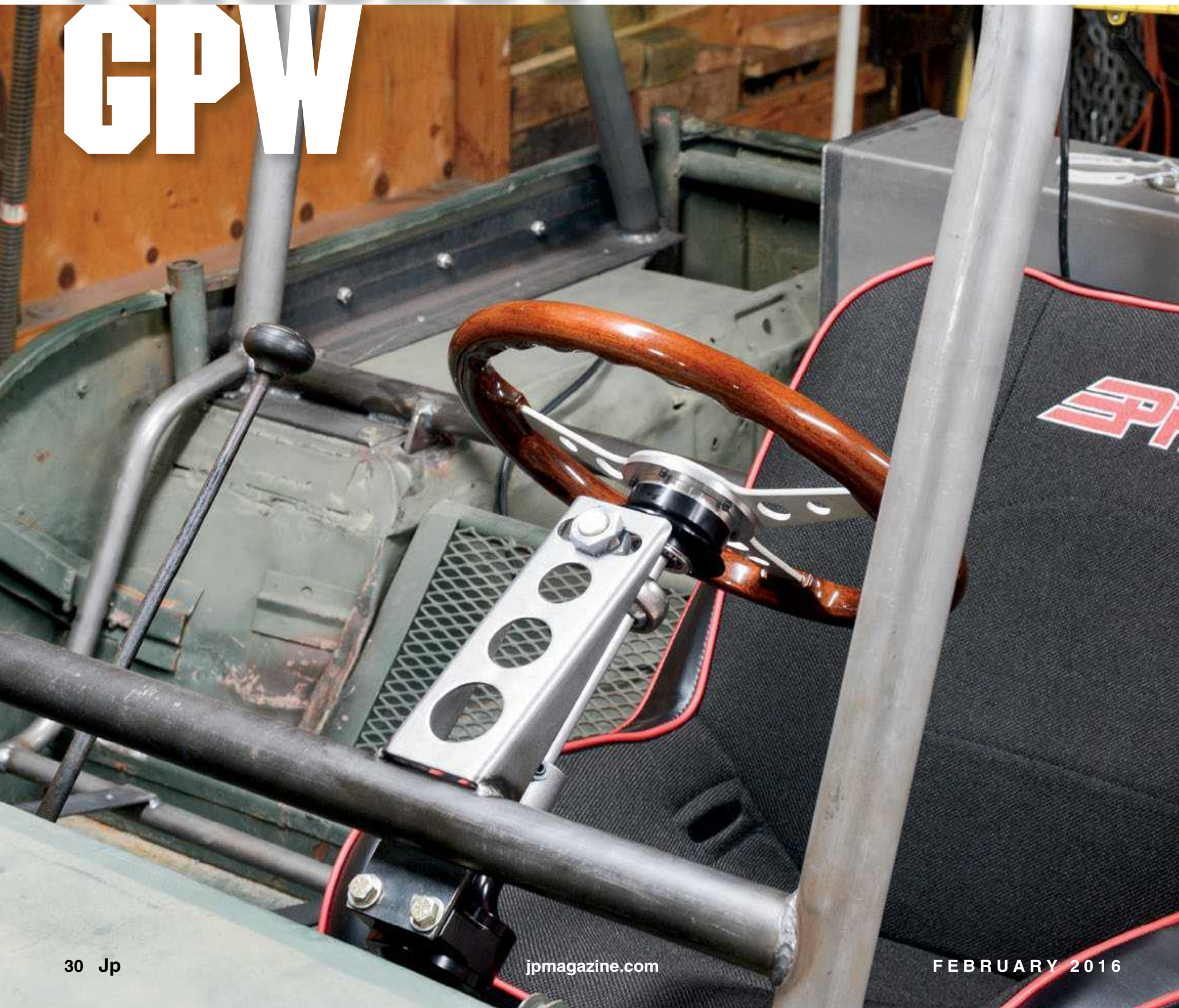
By John Cappa jpeditor@jpmagazine.com
Photography: John Cappa

GARAGE PROJECT GPW

We've always hated juggling the wheel of a slow-ratio power steering system. Some common

4x4 steering boxes require up to four turns lock-to-lock. After spending only a short time behind the wheel of friend's fullsize prerunner with a 2:1-ratio steering quickener, we were sold. Our flatfender needed a quick-ratio steering system, especially given the incredibly short wheelbase. Quick steering isn't for everyone, though. Some people don't like very responsive steering and consider it too twitchy. However, if you are used to high-performance road cars, you should be able to easily adapt to a quicker steering ratio.

There is more than one way to achieve a faster steering ratio on your Jeep. Saginaw steering boxes are available in several different ratios, and they alter the number of turns required to spin the steering box from lock-to-lock. Most steering boxes provide around 3¼ turns lock-to-lock. Faster boxes can be found in some Camaros and provide as few as 2½ turns lock-to-lock. The slowest of the bunch is probably the Jeep FSJ boxes at about 4 turns lock-to-lock. Unfortunately, not all of these steering boxes are interchangeable between different Jeeps. You still need to consider hose fittings, input spline count, and pitman arm clocking. If you are starting from scratch like us, it's a little easier to assemble a system that works. We made a call to Summit Racing to compile the steering components we needed for the quick-ratio system in our Jeep.



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17"/18"/20"



We started with a remanufactured three-bolt fast-ratio Saginaw steering box from a '79 Camaro (Summit Racing PN AAZ-27-6510). If mounted properly, the three mounting bolts are more than enough. This particular steering box mounts to the inside of the framerail and generally offers 2½ to 3 turns lock-to-lock. We used a stock pitman arm from a '74-'91 FSJ.

Most '76 and newer GM Saginaw steering boxes have a ¾-inch, 30-spline input. The '75 and older Saginaw steering boxes have a 1⅜-inch, 36-spline input. Be sure you order the right parts to make the conversion before diving into your swap.



Our system includes Borgeson double-D steering shafts and steering joints from Summit Racing. To correctly mount the steering joints, we used the set screws to mark the shaft once the proper length was determined.



We used a ⅜-inch drill to make ⅛-inch-deep holes for the set screws to seat into. This will keep the assembly from coming apart in abusive conditions. Always use thread-locking compound on the steering hardware.



The Howe Stealth HD (Summit Racing PN HRE-522B2) is one of the strongest steering quickeners on the market. It features a 2:1 quickening ratio, which may be too twitchy for some drivers. Summit Racing also offers other quickeners with less aggressive ratios. Our quickener was coupled to the steering shafts with 36-spline/double-D Borgeson solid couplers, also from Summit Racing. The quickener needs to be mounted to a cage or other rigid structure without being bound up. Follow the included directions closely or your steering will not spin smoothly.



Underhood clearance of a flatfender Jeep is at a premium. We needed to add a third joint to our steering shaft system. The use of a third joint required a pillow block to keep the shaft from flopping around. This ¾-inch rod end (Summit Racing PN BRG-700000) kept our shaft in line.



Summit Racing offers a weld-on Saginaw steering box mount (PN ADD-716838) for early Jeeps, but we built our own steering box mount using heavy-wall DOM boss tubing. It's welded directly to the frame with three passes on each side. Our fabricated mount allows for the installation of a heavy-duty four-bolt steering box if we ever find a need for it.



Summit Racing offers this trick firewall-mounted pillow block (PN BRG-700010), but we couldn't get it to work with our system. Plan out your steering and check for clearance by mocking it up with broomsticks or PVC tubing before ordering any parts.



Our three-joint steering shaft pokes around the power steering pump thanks to the support of the rod end pillow block. We built a small mount for it from 1/8-inch-thick strap steel and welded it to the frame.



On the business end of our steering shaft we installed a splined weld-on quick release steering wheel coupler (Summit Racing PN GRT-3024).




The steering quickener is mounted to a two-bolt tab on the rollage. We used a weld-on steering column mount from AA Manufacturing (PN AA-066-A) and a leftover 3/4-inch rod end to support the steering shaft.



Sources

Summit Racing, 800/230-3030, summitracing.com

A&A Manufacturing, 800/473-1730, aa-mfg.com

Being a little nostalgic, we capped the steering off with the 14-inch three-spoke rubbed-mahogany steering wheel rescued from our long-gone previous flatfender (Summit Racing PN GRT-704). 

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Hate those funky looking taillights? Tuck these LED units into the tub!

By Jay Kopycinski
jpeditor@jpmagazine.com
Photography: Jay Kopycinski

Ask Jeep owners what they think of LED lighting and you'll probably get varied

answers. Some love the new technology and updated look, while traditionalists are happy with the utilitarian look of the factory taillights. In any case, we wanted to clean up the tail of our '06 Rubicon LJ and actually get rid of the stock taillights.

We have seen LED conversions to round flush-mount lights, but we wanted to stick with a rectangular shape. After a bit of searching, we opted to use a set of Truck-Lite combination stop, tail, and turn lights with an array of 24 light-emitting diodes (LEDs). These mount with a large rubber grommet in the sheetmetal and were an easy install with a couple of hours worth of work.

We made ourselves a pattern to use when cutting the rear of the tub. The lights need to be positioned at equal height, clearing the license plate mount

on the driver side (if retained) and the tailgate hinges on the passenger side. Various tools can be used for cutting the thin sheetmetal, including a sabre saw, air body saw, or combination including thin abrasive cutting discs on a 4-inch grinder for cutting straight lines. However, the latter may burn and lift paint in the process.

The turn signals and flashers on '01-'06 Wranglers are pulsed using a small flasher module mounted on the steering column. The on-off flash rate is dependent on the load current produced by the incandescent bulbs in the turn signals. The new LED lamps draw much less current than the original bulbs, so running the LEDs with the stock flasher module results in an annoyingly rapid flash rate. One solution is to wire some large power resistors (5 ohms in this case) in parallel with the LED lamps to maintain the current draw from the flasher module. However, a quicker, cleaner way is to simply swap the factory flasher module for one from Gold Coast Distributing that's designed to provide the correct flash rate for LED lamps.

We made quick work of the install and the visual difference is evident. We like the less cluttered look on the rear of our Wrangler, and the total cost of the project was less than \$100.

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FLUSH YOUR TAILLIGHTS



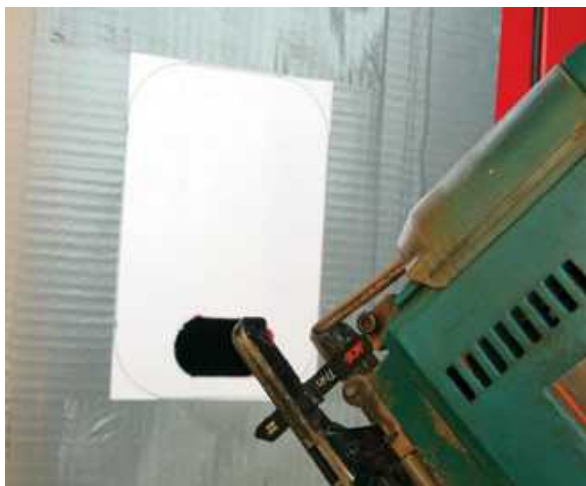
We used Truck-Lite LED (PN 4450) combination stop, tail, and turn lamps for our swap, along with rubber grommets and pigtail wiring connectors. The lamps are epoxy encapsulated and fully waterproof. We measured the current draw of the lamps at 13½ V to be less than ¼ amp in stop/turn mode.



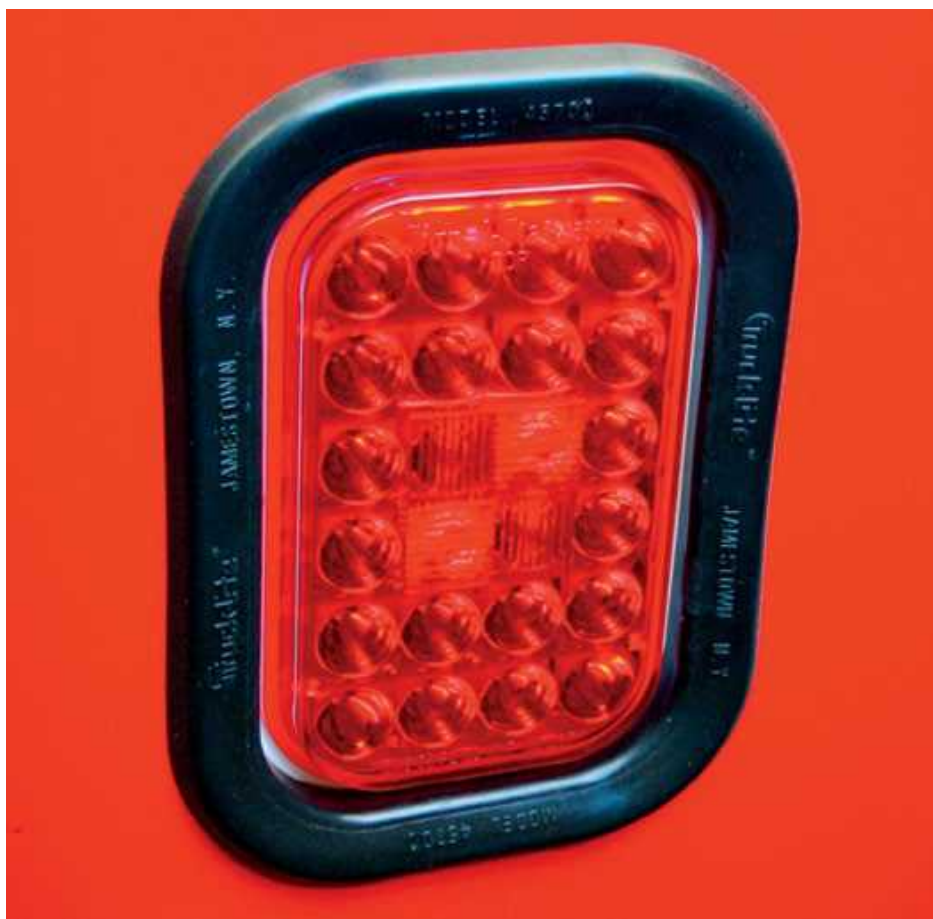
With the hole cut and the edges cleaned up with a die grinder and file, we popped the rubber grommet in. The LED light harness has only three wires. There is one for the running light array, one for the brighter stop/turn array, and a ground wire. We simply spliced and soldered these to the appropriate wires we had cut from the factory connector going to the stock light assembly. Wire color codes can be found in the service manual or online.



We started by removing the factory taillights. The outer lens was removed to expose the three bolts holding the taillight to the tub. The connector was cut off in order to splice on the new harness.




Truck-Lite provides the dimensions for the grommet opening. We drew a pattern on paper and taped it squarely in place. We like masking the area generously with duct tape to avoid scratching the paint. We used a sabre saw with a 36T fine-pitch blade for cutting the thin sheetmetal. Use of coarser-tooth blades risks grabbing and warping the metal edge.



Here's the resulting LED conversion once we pushed the new lamp assembly into the grommet. Granted, we no longer have backup lights here, but we will be installing upgraded lighting for that purpose elsewhere. We also lost the license plate light on the driver side, but we've relocated our plate with new lighting to the spare tire. Note that TJ owners may need to slightly relocate the emissions EVAP canister that sits behind the body panel forward of the passenger side taillight.



An LED compatible turn signal flasher module from Gold Coast Distributing is a simple plug-in solution to providing the correct flash rate when swapping over to LED lamps. The turn signal flasher on '01-'06 Wranglers is located on top of the steering column, under the plastic cover. 

Sources

Gold Coast Distributing,
805/340-9619, gcdoffroad.com
Truck-Lite, 888/562-5012,
truck-lite.com

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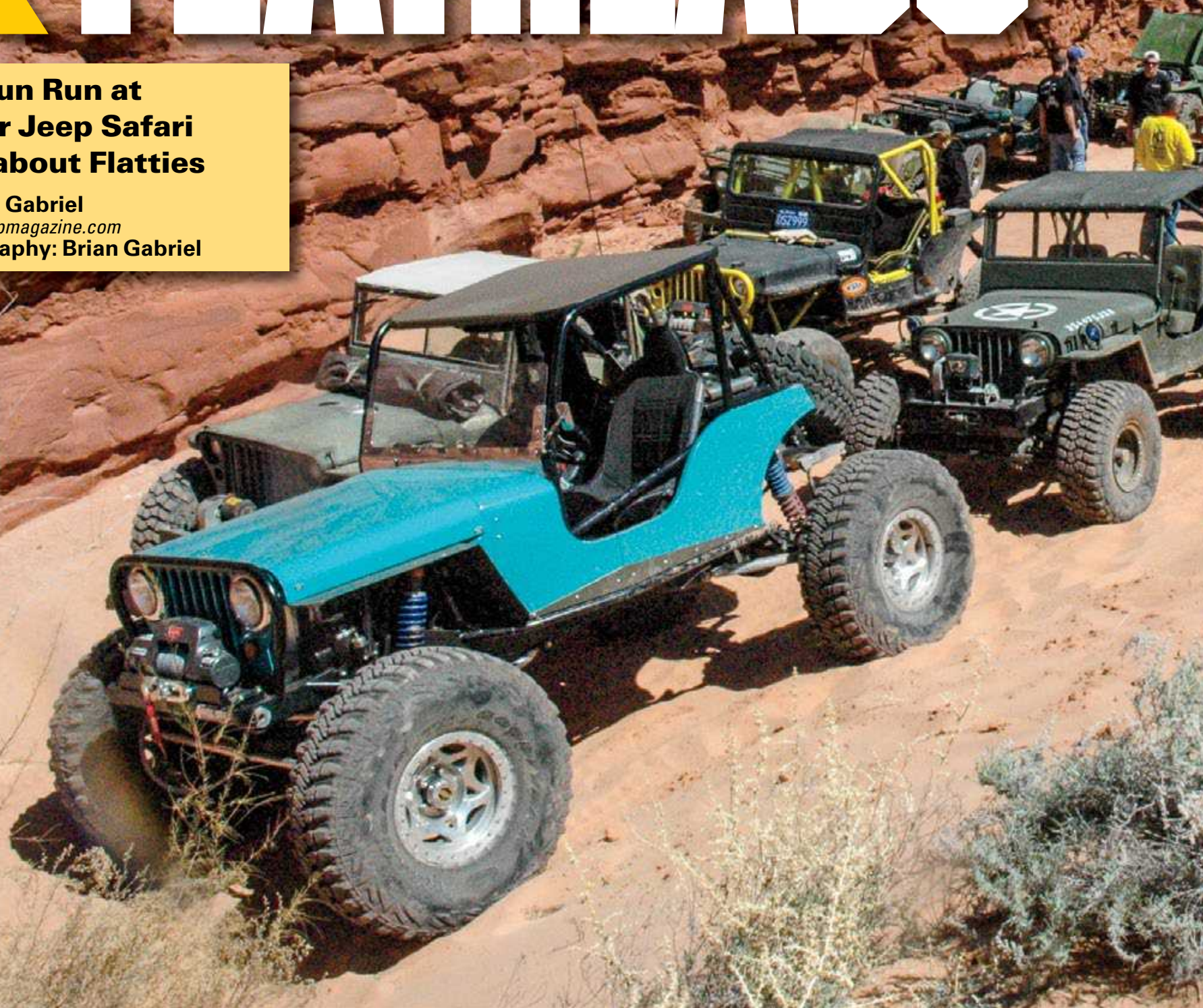
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FLATFENDERS & FLATHEADS

**The Fun Run at
Easter Jeep Safari
is all about Flatties**

By Brian Gabriel
jpeditor@jpmagazine.com
Photography: Brian Gabriel



Easter Jeep Safari (EJS) is one of the most widely known Jeep events in the world, with

people from all over the globe congregating in Moab to celebrate everything Jeep. A few years ago some people noticed that with all the hype over new JK Wrangler parts and putting tires the size of Texas on every Jeep headed for the hills or the mall parking lot, a bit of Jeep nostalgia was missing.

At EJS 2013, Brennan Metcalf (alumni for *4-Wheel & Off-Road's*

Ultimate Adventure in 2014 and 2015) decided it was time to make things interesting again. He reverted back to simpler times and smaller tires. With a Buick V-6 under the hood and 35-inch tires, he navigated his Willys flatfender all over Moab and turned some heads. This provocative act caught the attention of some veteran Jeepers and a few media friends. In fact, everyone decided that the awesome sight of an old Willys romping on the trails was a pretty good idea and they were missing out on some serious fun!

The Genesis

That was the potato in the pot, and it inspired a few more guys to leave their Jeep YJs, TJs, and JKs at home and bring out the old iron for EJS 2014. At the end of the week on Friday everyone gathered together for the first unofficial Flat Fender Fun Run. It was just a group of people in flatfenders that ran Flat Iron Mesa backwards with eight Jeeps that were all pre-1953. The passion that runs deep for these beautiful pieces of old iron pulled together a fun run with their Willys Jeeps by word of mouth.



The Easter Jeep Safari Flat Fender Fun Run 2015 was about midway through the Pickle trail when it stopped for some engine and wiring diagnostics that inevitably turned into lunch. From stock to stomper, there was a Jeep to fit everyone's fancy.

There were a couple of nicely restored Willys that came to chat for the morning but parted ways with us once it was time to head out on the trail. This sweet CJ-2A was proudly sporting its shovel and ax strapped to the side.



This Kabota-diesel powered CJ-2A made the first obstacle look like child's play. The low-end torque of the turbocharged diesel and traction from the locker in the rear axle made this Jeep one of the few that didn't have to winch to the top.

The flattie revolution was started, and it was clear that getting back to grass roots wheeling had to become an annual gathering. Metcalf started getting the pot stirred early for the Fun Run to get people stoked and draw a bigger crowd of flatties back to Moab for EJS 2015. A little advertising helped, and the second annual (still unofficial) Flat Fender Fun Run 2015 drew 14 Willys Jeeps for the trail ride. There was a broad spectrum of talent that day when rigs with powerplants ranging from L-head four-bangers, a couple of Buick V-6's, a Chevy 4.3L V-6, and of

course a couple of V-8s as well hit the trail at dawn. There were also a few more old rigs that turned up just for the morning gathering to show off their very nicely restored flatfenders.

In the Pickle

The trail of choice for 2015 was The Pickle, just north of town. There were a few Jeeps that were relatively stock, but that didn't seem to hold anyone back. The theme of the day seemed to be, "If at first you don't succeed, then back up and use more throttle until you do!" That

kind of attitude always makes for a pretty entertaining trail ride, and no one walked away disappointed. The best part was that there was no real carnage, which made for a smooth day. The CJ-2A with the Toyota drivetrain had a few hiccups throughout the day, but that was more because the owner finished building it the night before. There was a deep appreciation among the group for the long nights in the garage finishing up his project the week leading up to the EJS Flat Fender Fun Run.

Keep an eye on *Jp* for details about the Flat Fender Fun Run 2016. Dust off the seats and clean out the carbs—It's time to go old school. Bring your flatfender to Easter Jeep Safari!

FLATFENDERS & FLATHEADS



A line-up of flatfenders along the side of the main road in Moab sure turned some heads and drew some onlookers to drool over the different classics. Everyone took some time to show off their Jeeps and check out someone else's while we waited for a few stragglers to arrive.

The trail winds through a sandy slot canyon with high walls for a portion of the trip. It's amazing the way that nature carves out the landscape features. Lucky for us, this particular canyon was carved wide enough to drive Jeeps around this sandstone tower in the middle of the canyon floor.

The Killer Bee is a flatfender-based buggy that has seen a few different transformations over the years. The latest was to remove the stake bed off of the back and make some new body panels to bring back the old tub style. With links, coilovers, and 39-inch tires, this flatfender went just about anywhere driver Ned Bacon wanted it to go.



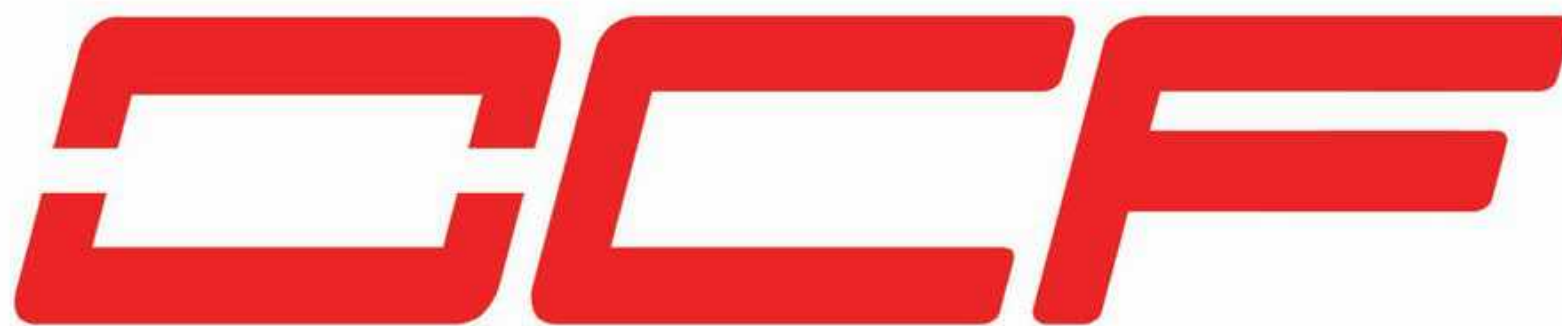
The diesel-powered CJ kept the tires churning when the stock F-head Go Devil motors were leaving the other flatfenders stalled out and rolling back down the hill. This Jeep was proving its worth all day long on the trail.



There were Willys big and small that showed up for the unofficial fun run, but they all came with drivers that weren't afraid to use the skinny pedal. These guys were ruthless in their attempts to get their old Jeeps to the top. We even had to talk some Jeeps down from the window ledge and to use the winch as they backed up farther and farther to attempt their sixth, seventh, and even eighth run at an obstacle. The motto of the day was definitely "grab second gear!"



This CJ-2A had undergone quite the transformation in the weeks leading up Easter Jeep Safari week. Aside from the Toyota drivetrain and running gear, the four-link had only been installed four days before the Flat Fender Fun Run. This was its first shakedown run after the entire build. It was burning a little bit of oil, but that was the least of the owner's worries that day. There were still a lot of bugs to work out, but all in all, this was a really cool flatfender build.



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FLATFENDERS & FLATHEADS



This tight crevasse is what gives the trail its name. This is The Pickle. It is an awkward rock formation that twists your rig up and pushes your driver side just inches from the canyon wall. Take the wrong line and you will find yourself between a rock and a hard place—in other words, in quite a pickle. Four Wheeler Network Content Director Rick Péwé demonstrated how to navigate the proper line in his 3B Ambulance Jeep with perfect three-wheel form.



Eric from LockRite lockers had his CJ-2A flatfender out on the trail beating the living snot out of it but having a great time and successfully navigating the trail. His Jeep was bone stock except for the addition of a LockRite locker in the rear axle.



Hooking up the winch is never a sign of defeat. It is better to get a little help to the top and keep your rig in one piece so you can continue down the trail. Too much pride and skinny pedal often result in broken parts and an early end to the day, not to mention the hassle of limping out of the woods. Besides, what is the point in having a winch if you don't use it once and a while?



The Turkish Ambulance 3B was the odd ball in the crowd. The long wheelbase gave it a climbing advantage over the other standard wheelbase flatties that day. The whole crowd was cheering when it made it to the top of the first obstacle of the day under its own power the very first try. The victory was celebrated too soon as it stalled just at the crest and rolled back down to the bottom. After a few more attempts, we broke out the strap to finish the job. This was the first of many Jeeps that would need a little assistance to the top.

Rules for the Run

Who: All flatfender Jeeps (no curves on this trail ride; it's politely enforced).

What: Flat Fender Fun Run.


Where: Somewhere in the Moab area and alongside the main road where you see a bunch of cool, old Willys Jeeps.

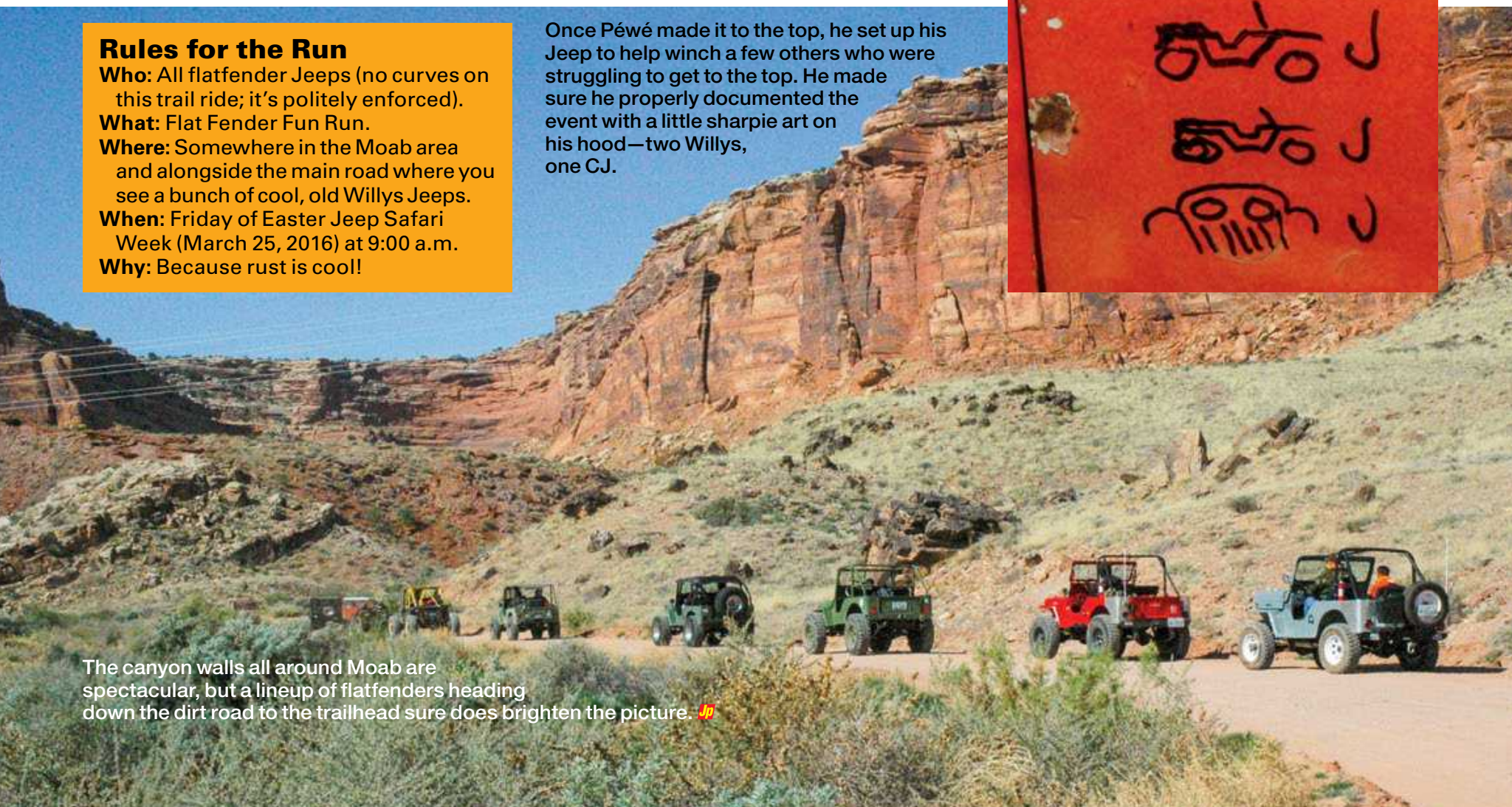
When: Friday of Easter Jeep Safari Week (March 25, 2016) at 9:00 a.m.

Why: Because rust is cool!

Once Péwé made it to the top, he set up his Jeep to help winch a few others who were struggling to get to the top. He made sure he properly documented the event with a little sharpie art on his hood—two Willys, one CJ.



The canyon walls all around Moab are spectacular, but a lineup of flatfenders heading down the dirt road to the trailhead sure does brighten the picture. 



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TNT Customs' Rock-Tek suspension for TJs and LJs

By Jim Brightly

jpeditor@jpmagazine.com

Photography: Jim Brightly

We bought our first Jeep (a '46 CJ-2A) from my wife's father in 1964 and there have

been many more since, so we have quite a few decades of experience with Jeeps. When it was time to get our new-to-us Jeep, we decided to go with a first-gen Wrangler because, while it has many of the creature comforts we both desired, it has few of the electronic nannies I can live without. So when I located a fairly basic used Rubicon Unlimited LJ in Manchester, New Hampshire, my youngest son and I flew out to pick it up and drive it back to Arizona. We set the cruise control, turned the radio up, and steered the Jeep between fuel and food stops. That 3,000-mile trip, at those sustained high speeds across most of the United States, proved the reliability of the 10-year-old Wrangler.

Uplifting Moment

When it came time to begin the transmogrification of the stock LJ, we decided to go with a TNT Customs suspension lift kit. Talking to the folks at TNT, we found out that the TRI-4 rear suspension was designed to cycle vertically throughout articulation to eliminate rear-steer sometimes found in other suspensions. The lower arms are manufactured from 2-inch, 0.375-wall 1026 DOM tubing to handle anything they may come in contact with. Upper arms are 1.50-inch by 0.250-inch 1026 DOM tubing. All control arms have 2½ inches of adjustable length and feature rebuild-able Flex joints and bushings.

TNT Customs works with shock absorber and spring manufacturers such as FOX and ARB to create its suspension system. TNT recommends the FOX 2.0 Performance Series IFP smooth body shocks because they offer a comfortable on-road ride and predictable off-road handling. The Old Man Emu coil springs (2989 front springs and 2949 rear



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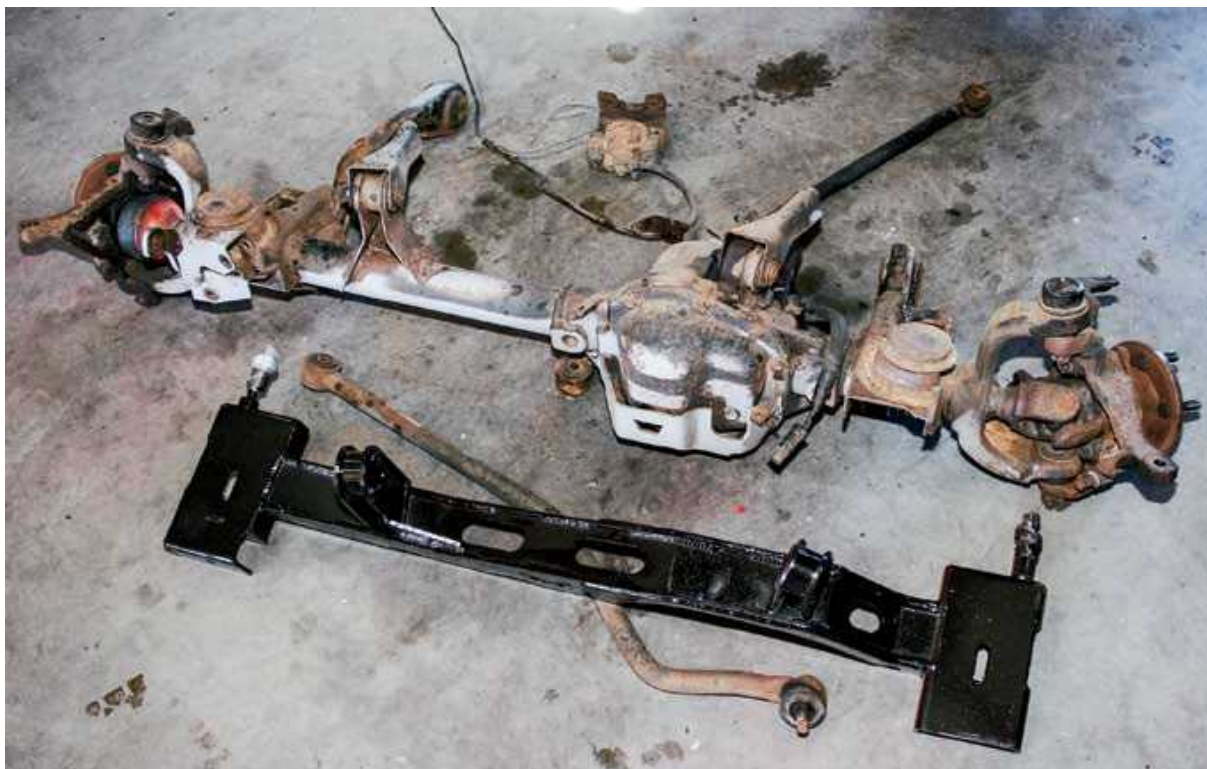
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LONG-ARM LIFT KIT



The TNT front truss is an option and is not included in the kit. TNT indicated that the front truss is not absolutely necessary, but we opted for it because of the added strength to the Dana 44 housing and the fact that we may go to larger tires than the 35s we're mounting now. The TNT front truss is made from $\frac{3}{16}$ -inch steel and greatly increases the housing's strength.

All factory attachment points must be removed from the front axlehousing in order to mount the truss. We used a grinder to clean them off of the front axle and smooth out all the surfaces.

springs) from ARB are a perfect match for these shocks and the LJ.

While the LJ's Rock-Tek Y-link high clearance front arms are similar, albeit much stronger, to the Jeep's OEM suspension, changing the rear suspension from a track bar system to a Rock-Tek dual-triangulated four-link, along with relocating the shock mounts helps to improve the overall stability of the Jeep. A big difference between this kit and others is there are no anti-sway bars to worry about disconnecting in this system.

The kit's high-clearance pan nets a clearance gain of $1\frac{3}{4}$ -inch over stock on '97-'02 models and nearly 3 inches on '03-'06 model years. TNT Rock-Tek long arm suspension kits also come with a weld-on, full-length rear axle truss assembly for the rear axle. It includes the TNT TRI-4 mount, coil-spring mounts, new lower control arm mounts, and shock mounts.

This kit is not for the faint of heart. It's not a simple bolt-on assembly, and unless you're a very experienced mechanic with a full complement of shop tools, including a plasma cutter, MIG welder, grinders, air tools, drill press, power saws, floor jacks, and a chest full of hand tools, you should really consider having a pro do the work. We did just that.

Rims and Rubber

One of the primary reasons to get a suspension lift system is to get more clearance for the axles with some bigger tires.



We double-checked all our measurements to verify that the truss was properly aligned prior to welding it into place on the front axle. The truss must be in just the right location so that the pinion angle will be within acceptable working parameters.



When all the OEM attachment points had been removed from the rear axle too, we located the rear truss, tacked it into place, and verified its location. We then pulled the rear differential back out, turned it upside down, and finished all the welding on the truss.



Before mounting the TNT cross members, the engine had to be lifted an inch. That lift was accomplished by swapping in a pair of Mountain Off-Road Enterprises motor mounts. The Jeep's 4.0L exhaust also had to be modified for the TNT Customs crossmembers.



The Jeep's body also had to be lifted an inch for the TNT Customs suspension, so that was our next task. We cut off the OEM body mounts so the TNT-supplied body mounts could be installed where called for in the instructions.

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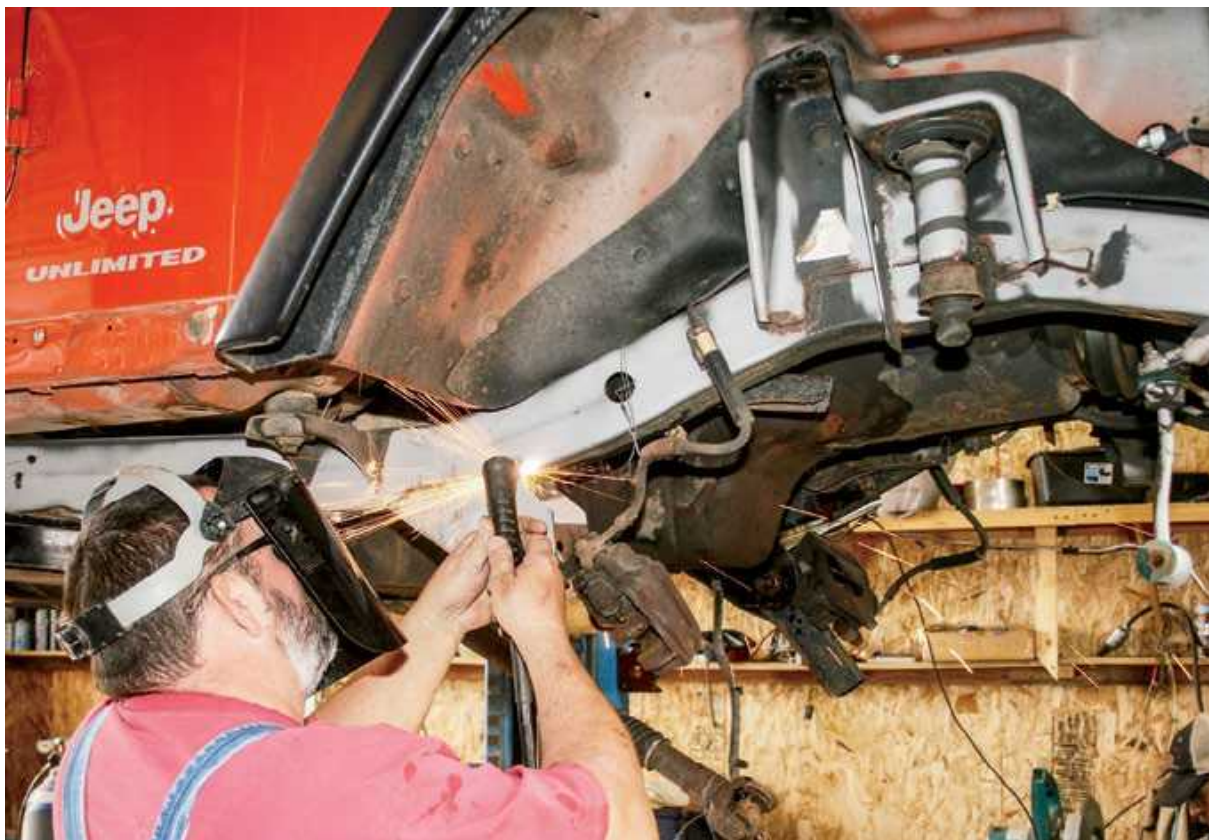
LONG-ARM LIFT KIT

In order to remove the front driveshaft, the front crossmember/skidplate must be removed. With the Rubicon model, the air pumps for both axle lockers are mounted on that crossmember. Once the transmission and mount were secured to the replacement crossmember, we fabricated a new mount for the air pumps.

The OEM control arm mounts on the Jeep's frame rails must be removed before the TNT crossmembers can be mounted.



We discovered that it is much easier to install the Rusty's Off-Road adjustable upper spring pads first. We removed the foam bump stop and the bump stop cup. A plasma cutter, hammer and chisel, air chisel, and a grinder were used to remove the OEM upper spring pads. Once the sides of both frame rails are smooth, you can fit the kit's bases onto the frame. The base's go in the peak of the frame rail's upper curve.



The coil springs were then slid into place. On this Jeep, the lower bumpstop can't be screwed into place until the spring is located. Use a Philips screwdriver to thread and tighten the bump stop into place. The ARB rear coil springs come in two lengths, and the shorter one goes on the driver side. Everything was bolted back into place, and the Jeep was ready for its tires.

We went with the Yokohama Geolander M/T 35x12.50-17 directional tires because they will help us churn through mud with their beefy tread lugs and deep voids. In case your Jeep can't fit 35-inch tires, the M/T directional tires are available in several different sizes, from 29 to 40 inches in diameter.

Big meats have to be mounted on wheels strong enough to support them and attractive enough to complement them. We liked the Raceline beadlock and got them through Summit Racing. These wheels are engineered to hold up to the extreme abuses of off-road desert racing and professional rockcrawling. They offer a 32-bolt beadlock system built with durable outer rings and a strong inner lip to allow your rig to go over obstacles, while keeping the tire bead securely attached to the wheel, even at very low air pressures.

One Direction

A sturdy steering system upgrade is also something that should accompany a suspension lift system and larger tires. We turned to Rugged Ridge for its heavy-duty steering components (replacing the OEM tie rod with a stronger straight tie rod) and stabilizer. Once the install was finished, the LJ went to the closest Ted Wiens Tire & Auto for a full chassis alignment. A full chassis alignment should be done after any suspension rebuild, and the Ted Wiens shops have the requisite experience with 4x4s.



After cutting out a portion of the frame rail, the upper shock mount must be welded on the sides, top, bottom, and across the slot to make sure the frame is not weakened.

Just as we did with the front axle, adjustable straps were used to hold and position the rear axle in place underneath the Jeep. This allowed us to fine-tune the position of the axlehousing while bolting all of the Y-link components into place.



This is an example on how the finished rear four-link system should appear. Also make sure that your new exhaust system completely exits the rear of the Jeep.




The Raceline Allied brand steel beadlock wheels we got from Summit Racing are 17x10s with a 3½-inch offset, which is an excellent match for the Yokohama Geolander M/T 35x12.50-17 tires. Each rim bolt must be torqued according to the manufacturer's specifications and sequence. Tires are on, limiting straps in place, and the Jeep is ready to go.

The Rugged Ridge heavy-duty steering kit included much stronger tie rod ends and clamps. The stronger design gives you a straight tie rod—instead of a curved tie rod—with the drop link attachment point near the end. A new steering shaft support was also included in the kit with the body lift. We used the heavy-duty stabilizer kit from Rugged Ridge.



After the suspension and steering modifications were complete, the Jeep was ready for a complete chassis alignment. This is something that should be done after any suspension kit installation and before the Jeep gets driven very far. Ted Wiens Tires in Las Vegas, Nevada, took care of this chore for us.



With the TNT Customs lift and body armor in place, the '05 Unlimited Rubicon was a much more capable trail vehicle and easily able to scale a 6-foot-high near-vertical waterfall. 

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TNT Customs, 307/775-9565, tntcustoms.com

Yokohama Tires, 800/722-9888, yokohamatire.com

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OIL BURNER





A J20 built on top a Cummins-fired Dodge 2500

By Stuart Bourdon

jpeditor@jpmagazine.com

Photography: Brotography PA

Mitchell Zimmerman

decided at a certain point in his life that he was going to

drive nothing but Jeeps. He already had a Wrangler so that was a no-brainer, but he also wanted a pickup truck. The Pennsylvania resident found what he wanted in Illinois, so he drove over and bought a near-perfect condition Comanche. It had the low-output 4.0L engine and leaked a little oil. (An old Jeep leaking oil? Naahhh.)

He came up with the plan to do a Cummins 4BT or Mercedes diesel swap into the Comanche, and because he heard the guys at Zion Offroad in York, Pennsylvania, had done quite a few successful diesel conversions, he headed over in his Comanche for a quote. Lo and behold, what should Zimmerman spy when he got to Zion Offroad? It was an '88 Jeep J20 pickup truck that appeared to be in pretty good shape. Well, that sight started a conversation, and before he could say '88 Jeep J20, it was his in trade for the Comanche. Since then, Zion Offroad has replaced the engine in the Comanche with a high-output 4.0L, but that's not really what this story is about.

Chassis

Before Zimmerman set eyes on the J20, it had already received some work from Zion Offroad. The frame had some considerable rot when they got it, but other than that, the truck was in decent condition. The guys realized that the J20 frame was within a 1/2 inch overall length of the frame sitting under a '92 Dodge 2500 Cummins pickup they had in the shop. It didn't take long for them to have that frame under the J20 body, and that allowed the mounting of a 3.54 Dana 60 up front and a 3.54 Dana 70 in the rear. The stock suspension was kept and 37-inch Pro Comp tires and 17-inch Pro Comp wheels were mounted up. Wonder

HARD FACTS

Vehicle: '88 Jeep J20/1992 Dodge 2500 frame

Engine: '92 5.9L I-6 Cummins diesel

Transmission: Getrag five-speed manual

Transfer Case: NP205

Suspension: Stock leaf springs & shocks

Axles: Dana 60 front, Dana 70 rear, both 3.54 gears

Wheels: 17-inch Pro Comp

Tires: 37-inch Pro Comp

Built For: The joy of driving something unique

OIL BURNER

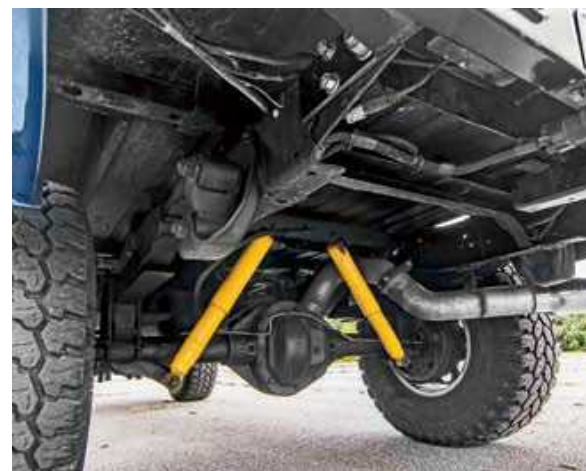
how it works? Zimmerman said the truck scored a 560 on MetalCloak's CTI ramp—not bad for a 1-ton pickup truck.

Engine

The Cummins powertrain was moved back 4 inches on the Dodge frame to fit within the J20 cowl and make room for the custom radiator with no firewall mods needed. Then Zimmerman went to work to really “make it his.” The 5.9L had a water pump leak, but he decided to not stop at simply replacing that. He had East Coast Diesel of Jonestown, Pennsylvania, help him rebuild the engine using a BD Power Fuel Pin, Dynomite Diesel 150HP Stage 3 55LPM injector set, and a BD Power Super B Turbocharger. To help the engine run cooler, he installed a Snow Performance Stage III Water Methanol Injection System and placed the water/meth pump and a 7-gallon tank in a bed-mounted toolbox. A K&N intake filter system and a custom straight pipe exhaust were also added. He made a custom CNC valve cover for the 5.9L, and a South Bend clutch channels power to the Getrag five-speed manual transmission. Zimmerman also sandblasted and repainted many of the engine components to make it all look like new.

Cabin

For the interior makeover, Zimmerman worked with James Long Upholstery Studio in Mount Joy, Pennsylvania. The J20 received new black carpet, the dash was dyed black, and a set of Wagoneer power seats were reupholstered in black vinyl with silver cloth inserts. Posies Rod And Custom of Hummelstown, Pennsylvania, installed a Vintage Air electronic air conditioning and heating system and did a complete instrument swap using Dakota Digital display panels and instruments for everything except for the EGT and boost, which are Auto Meter gauges. A Bluetooth-capable radio makes





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Spartacus Stamped Steel Front Bumper (11544.01) & Spartan Grille (12034.01)

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- Stamping process allows for most advanced styling in the market
- Stamping also allows for efficient use of materials resulting in a bumper lighter than most aftermarket steel bumpers
- Injection molded crush can covers add modern styling while keeping vehicle within factory spec (front bumper only)
- Stamped in knuckles strengthen vulnerable bottom edge while providing a rugged and tougher look
- Rear bumper accepts 7/8-inch D-Rings
- Front bumper uses the factory tow hooks

Description	Omix#
Stamped Front Bumper, Black, 07-16 Wrangler	11544.01
Stamped Front Bumper w/ Override, Black, 07-16 Wrangler	11544.09
Stamped Bumper Winch Plate, Black, 07-16 Wrangler	11543.13
Stamped Rear Bumper JK, Black, 07-16 Wrangler	11544.51

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4" & 2.5" Off Road Lift Kits
Eibach Spring Kits with Fox EVO or SST3000 Shocks. Available with High Steer Kit. **\$493.04** 2.5" Kits Start At

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1.375" DOM tube construction. Welded ends. Includes Adjustable Johnny Joint® **\$291.88** Starting At



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Correct steering geometry and improve steering precision and handling. **\$239.23**



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Available in 8, 4 and 2 arm kits. With Johnny Joints and/or TCT Flex Joints. **\$341.60** 2-Arm Kit



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hands-free phone calls possible, and Dakota Digital electronic door locks and remote entry system mean no fumbling with keys on dark cold nights. For added comfort and quiet, the entire cabin was lined with Dynamat and Dynaliner.

Body

Exterior adornments were kept simple but functional. Zion Offroad made some custom bumpers for the J20, and a late-model Wagoneer grille fronts the truck. Zimmerman added a set of Rigid Industries LED lamps in custom mounts on the rear bumper to act as reverse lights, and a pair of Truck-Lite LED headlamps brings the Jeep's forward-facing lighting into the 21st century. He also built a custom mount for the front bumper that enabled the use of a Quadratic 10,000-pound capacity Competition Series winch. The winch is set up with synthetic cable, and a Factory 55 flatlink

attachment dead-ends the cable. The J20 is coated in Jeep Deep Water Blue Pearl paint. The body and paint work were done by Engles Frame and Body and Dale Lee Auto Body, both in Ephrata, Pennsylvania.

Zimmerman told us, "When I sit in some of my friends' shiny new vehicles, I do admire the supple seating and the fantastically modern infotainment center, and occasionally I even crave the fuel economy and neck-jerking acceleration. However, I just can't imagine owning such a mundane contraption. It feels like piloting an Android or iOS device." We can't argue with that. Zimmerman continued, "When I turn the key in my J20, I am instantly rewarded with the glorious growl of a Cummins under the hood and the satisfaction that I'm driving an off-road machine that rattles, squeaks, hums, and delivers a visceral experience that makes me smile all day long." 



Why I Wrote This Feature

It's a hot-rod 5.9L Cummins in a Jeep J20 pickup on a Dodge 2500 frame. Any other questions?

—Stuart Bourdon

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SUPER COUPON

7 FT. 4" x 9 FT. 6" ALL PURPOSE WEATHER RESISTANT TARP

Customer Rating ★★★★★

LOT 69115/69137
69249/69129/69121
877 shown

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Customer Rating ★★★★★

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SUPER COUPON

1500 WATT DUAL TEMPERATURE HEAT GUN (572°/1112°)

Customer Rating ★★★★★

LOT 62340/62546
96289 shown

SAVE 70%

\$8.99 comp at \$29.97

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SUPER COUPON

drillmaster

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96289 shown

Customer Rating ★★★★★

SAVE 70%

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SUPER COUPON

PITTSBURGH AUTOMOTIVE

2 TON FOLDABLE SHOP CRANE

Customer Rating ★★★★★

LOT 60388
69514 shown

SAVE \$120

\$179.99 comp at \$299.99

78299939

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SUPER COUPON

SNATCH BLOCK

BADLAND

LOT 62435/61673 shown

Customer Rating ★★★★★

SAVE 51%

\$19.99 comp at \$40.99

78250267

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SUPER COUPON

drillmaster

LOT 62340/62546
96289 shown

Customer Rating ★★★★★

SAVE 70%

\$8.99 comp at \$29.97

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20% OFF

ANY SINGLE ITEM

Limit 1 coupon per customer per day. Save 20% on any 1 item purchased. *Cannot be used with other discount, coupon or any of the following items or brands: Inside Track Club membership, extended service plan, gift card, open box item, 3 day parking lot sale item, compressors, floor jacks, saw mills, storage cabinets, chests or carts, trenchers, welders, Admiral, CoverPro, Daytona, Diablo, Franklin, Hercules, Holt, Jupiter, Predator, Stik-Tek, StormCat, Union, Vanguard, Viking. Not valid on prior purchases. Non-transferable. Original coupon must be presented. Valid through 3/27/16.

78256838

WOW SUPER COUPON

44", 13 DRAWER INDUSTRIAL QUALITY ROLLER CABINET

Customer Rating ★★★★★

SAVE \$660

\$369.99 comp at \$1029.99

LOT 62744/68784 shown
69387/62270

78246088

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SUPER COUPON

13 PIECE 1/2" DRIVE DEEP WALL IMPACT SOCKET SETS

PITTSBURGH

TYPE	LOT	COMP AT
SAE	67903/69280 69333/69560	\$46.97
METRIC	67904/69279 69332/69561	\$49.99

Item 69560 shown

SAVE UP TO 60%

\$19.99 YOUR CHOICE

78285611

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SUPER COUPON

12 TON HYDRAULIC PIPE BENDER

Central Hydraulics

Customer Rating ★★★★★

SAVE \$90

\$89.99 comp at \$179.99

LOT 62539
32888 shown

78276074

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SUPER COUPON

drillmaster

LOT 62340/62546
96289 shown

Customer Rating ★★★★★

SAVE 70%

\$8.99 comp at \$29.97

78302079

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PITTSBURGH AUTOMOTIVE

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LOT 69227/62116/62584
62590/68048 shown

78255748

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SUPER COUPON

CAN AND OBD II PROFESSIONAL SCAN TOOL

CENTECH

LOT 62120
60694 shown

Customer Rating ★★★★★

SAVE \$260

\$89.99 comp at \$349.99

78258077

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SUPER COUPON

12" SLIDING COMPOUND DOUBLE-BEVEL MITER SAW WITH LASER GUIDE

CHICAGO ELECTRIC POWER TOOLS

LOT 69684 shown
61776/61969
61970

Customer Rating ★★★★★

SAVE \$264

\$134.99 comp at \$399

78265958

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SUPER COUPON

drillmaster

LOT 62340/62546
96289 shown

Customer Rating ★★★★★

SAVE 70%

\$8.99 comp at \$29.97

78302079

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WOW SUPER COUPON

1/2" INDUSTRIAL QUALITY SUPER HIGH TORQUE IMPACT WRENCH

CENTRAL EARTH PNEUMATIC

Customer Rating ★★★★★

SAVE \$170

\$79.99 comp at \$249.99

LOT 62627
68424 shown

78267091

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SUPER COUPON

POWDER-FREE NITRILE GLOVES PACK OF 100

HARDY

5 mil. thickness

SIZE	LOT
MED	68496/61363
LG	68497/61360
X-LG	68498/61359

Customer Rating ★★★★★

YOUR CHOICE

\$6 comp at \$14.97

Item 68498 shown

78274142

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SUPER COUPON

4-1/2" ANGLE GRINDER

drillmaster

LOT 95578/69645/60625 shown

SAVE 59%

\$11.99 comp at \$29.97

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SUPER COUPON

OFF-ROAD LONG-RANGE TRUCK LIGHT SYSTEM

ROADSHOCK

LOT 3029

SAVE 40%

\$24.99 comp at \$41.99

78312642

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SUPER COUPON

drillmaster

LOT 62340/62546
96289 shown

Customer Rating ★★★★★

SAVE 70%

\$8.99 comp at \$29.97

78302079

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WOW SUPER COUPON

Customer Rating ★★★★★

SAVE \$453

12,000 LB. ELECTRIC WINCH WITH REMOTE CONTROL AND AUTOMATIC BRAKE
LOT 60813/61889/61256/68142 shown

AWARD WINNING QUALITY

\$299.99
~~\$399.99~~ comp at \$752.99

BADLAND

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WOW SUPER COUPON

FREE

WITH ANY PURCHASE
CENTECH 7 FUNCTION DIGITAL MULTIMETER
LOT 90899 shown 98025/69096

\$14.99
VALUE

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PITTSBURGH AUTOMOTIVE

6 TON HEAVY DUTY STEEL JACK STANDS
LOT 69596 61197/62393 38847 shown

SAVE 50%

Customer Rating ★★★★★

\$39.99
comp at \$79.99

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WOW SUPER COUPON

Customer Rating ★★★★★

9 PIECE FULLY POLISHED COMBINATION WRENCH SETS
LOT 69043/42304 shown

SAE
LOT 42305/69044

YOUR CHOICE
\$5.99 comp at \$17.97

SAVE 66%

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WOW SUPER COUPON

MIG-FLUX WELDING CART
LOT 69340 shown 60790/90305/61316

Welder and accessories sold separately.

SAVE 50%

Customer Rating ★★★★★

\$34.99
~~\$44.99~~ comp at \$69.99

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WOW SUPER COUPON

2 HP, 8 GALLON, 125 PSI PORTABLE AIR COMPRESSOR
LOT 68740/69667/67501 shown

Customer Rating ★★★★★

\$99.99 comp at \$149

SAVE \$49

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WOW SUPER COUPON

3 PIECE TITANIUM NITRIDE COATED HIGH SPEED STEEL STEP DRILLS
LOT 91616 shown 69087/60379

Drill 28 Hole Sizes

SAVE 85%

\$8.99 comp at \$59.97

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WOW SUPER COUPON

20 TON SHOP PRESS
LOT 32879 60603 shown

Pair of Arbor Plates Included

SAVE \$215

\$154.99 comp at \$369.99

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WOW SUPER COUPON

4 PIECE 1" x 15 FT. RATCHETING TIE DOWNS
LOT 60405/61524 62322/90984 shown

SAVE 60%

\$7.99 comp at \$20.37

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WOW SUPER COUPON

MOVER'S DOLLY
LOT 60497/93888 shown 61899/62399

1000 lb. Capacity

\$8.99 comp at \$19.97

SAVE 54%

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WOW SUPER COUPON

8 CHANNEL SURVEILLANCE DVR WITH 4 INFRARED CAMERAS
LOT 61229 shown 62463/61624

SAVE \$140

\$259.99 comp at \$399.99

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WOW SUPER COUPON

26", 4 DRAWER TOOL CART
LOT 95659 shown 61634/61952

580 lb. Capacity

SAVE \$250

\$99.99 comp at \$349.99

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WOW SUPER COUPON

27 LED PORTABLE WORKLIGHT/FLASHLIGHT
LOT 67227 shown 69567/60566/62532

Batteries included.

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The only colors for '45 were Harvest Tan and Pasture Green, and the Sunset Red wheels are an original color. The '46 models would expand to four colors. The unique canvas top and bows on early CJ-2As had a two-piece "converto" design used as a half cab or a full canvas. It also has the 260-pound front weight common on Jeeps destined for farm use, as well as the optional chaff screen over the signature seven-slot civilian grille.

JEEP ENCYCLOPEDIA

1945 CJ-2A

By Jim Allen

jpeditor@jpmagazine.com

Photography: Jim Allen

Many enjoy a trip back in time to see what people saw "back in the day," whenever

that was. When you look at Michael Myer's '45 CJ-2A, you are going back to July 1945, just as the first civilian Jeeps were rolling off the assembly line in Toledo, Ohio. When it comes to exact detail, it's about as perfect a restoration as you will ever find on a Jeep from this period. On top of that, it's also one of the earliest production civilian survivors.

The Jeep you see here is the 163rd production Jeep CJ built (serial CJ2A-10163). It has all its major original parts. It's a "matching numbers" Jeep. Well, almost. It appears the transmission was replaced in '46, likely still under warranty. In the earliest days, the engine number matched (or was close to)

the vehicle serial number. This rig has engine number CJ2A-10170, so the serial number is off by only 7 digits. The exact production date is unknown, but Myers has tracked it down by component dates and casting numbers to about the third week of June 1945.

Civilian Jeep production started in late June, mainly to build enough units for the big debut at CESOR Farm in New Hudson, Michigan, the third week of July 1945. "Jeep Day," the official name, was to occur July 18, but 700 people were invited to Toledo the day before to view the assembly line in operation and get the full rah-rah and skinny on the new civilian line of Jeep. The group then traveled to CESOR Farms nearby in Michigan to see Jeeps in action on the farm. By July 19, AP-sourced articles were appearing in nearly every newspaper in the country and the Jeep was off and running.

The civvy Jeeps were built alongside military MBs that were still in production until September 21. There were starts and stops on the civvy line, a big one being a lack of T-90 transmissions from Warner Gear. This was a new transmission and Warner was gearing up to produce them in

volume, but a two-week strike held things up. In the end, 1,824 '45 CJ-2As were produced before production officially changed over to '46 models in October 1945, which were not that different.

Being the first of the civvy breed, the early CJ-2As evolved rapidly. Some of this was to fine-tune it or a new market, but much was due to component changes. Willys-Overland made a deliberate effort to use up stocks of applicable MB components. These included a few body panels (notably the driver side below the door opening which still had the tool indents), the military full-float rear axle, the military exhaust system, and a few other smaller things. Many of these things would change during '46 model year production.

As was usual Willys practice, the serial numbers started at 10001. For the CJ-2A, the numbers ran consecutively until they were replaced by the CJ-3A in 1949. The 1945 models had a serial number range of 10001-11824. That is a pretty narrow range of serial numbers to be an "official" '45, but given that they ran down the line with war production MBs and were the very first civilian Jeeps, they are a very sought after Jeep collectible.

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Among the most noticeable features of a '45 and early '46 Jeep are the column shift transmissions. We can just see the sneers forming on the lip of modern Jeepers out there. Yeah, there was really no excuse. They tried to foist off column shifts on the Army with the pre-standardized MA in 1941, and they didn't like it. They were cranky, wore out quickly, and could get bound up when the chassis flexed. The apparatus on the early CJ-2A was very similar to the MA and had all the same problems. Not long into '46 production (38221 to be exact), the column shift was replaced by the more familiar cane shift. Nobody cried at the time. Some 70 years down the road, the column shift makes a Jeep so equipped in a very rare class. Most Jeeps that had them from the factory no longer do all these years later. The parts are very hard to find, and the presence of it on a very early CJ has a big influence on the price.

Mike Myers, an Ohio firefighter found the Jeep in 2006 and couldn't resist the unique challenges of restoring a Jeep just two steps away from being a prototype. While it only has 2,700 original miles, that doesn't mean it was pristine when Myers got hold of it. It had spent a lifetime working on an Alabama farm and was "ridden hard and put away wet," as the old saying goes. Still, it was complete, unmolested, and with the low serial number, a diamond in the rough. It had never been registered until Myers did so in 2013.



There wasn't much on the options list. A heater was available. The seats, still military-like canvas, had about 3 inches more padding than the GI seats. The most unusual feature is the "three-on-the-tree" column shift. The white shifter knob appeared only on about the first 200 Jeeps built, after which it was black.

The bed extension was a common accessory that allowed for a little extra cargo capacity. This one was from Koenig. It attached to the original tailgate mounts and had a couple of braces underneath to the drawbar. The original tailgate transferred to the new box. It was a simple way to deal with a space issue.





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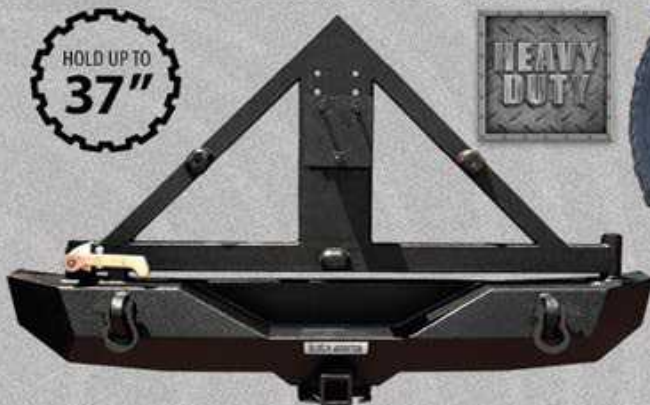


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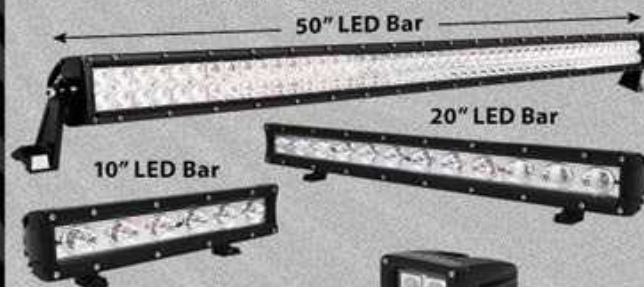
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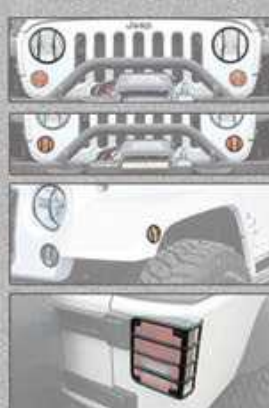
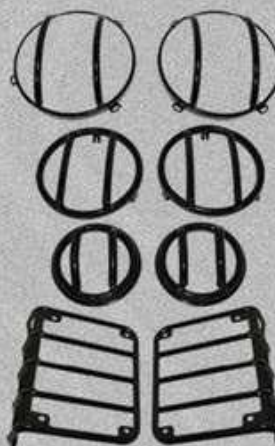
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The Go-Devil 134ci engine was almost unchanged from the MB military jeep. In fact, on this and many other very early CJ-2As, the engines were built for MBs and stamped with an MB number (prefix "MB" with a sequential), but those numbers were ground off and replaced with "CJ2A" and a sequential that started at 10001. You might have spotted the lack of a serial number and body-number plate on the passenger firewall. That's because some of the early '45s didn't have them. This was the case to somewhere between 10218 and 10234, when the familiar tags were added.

This King-Seeley governor is the original unit. Governors were necessary for PTO operation, and this Jeep was also ordered with a rear PTO. The governor would hold the engine at the set speed regardless of load. It was engaged by turning the knob on the pulley snout (engine off, needless to say). A knob on the left side of the dash controlled the speed.



Meyers started the restoration in 2006 and finished in 2013. About 60 percent of the body is still original, which took some work. He acknowledges the particular help the late Jake Ladd, an old-school master body man did on the body with the help of Myers' father-in-law Jerry McCoy. Myers is quick to point out that there is less than a quart of bondo on this Jeep. Scott Hall finished up the bodywork and applied the Harvest Tan paint. Jeff Petrowich reproduced the early top, and Myers himself did the bows. The mechanicals needed refreshment but weren't in horrible condition because of the low miles. Whenever possible, which was a good part of the time, NOS parts were used. Mike also acknowledges the wisdom of Keith Buckley, a well-known Jeep historian who supplied him with the period-correct details, plus a lot of encouragement to do a faithful restoration.

Yep, some people might call this a bit over the top. Mike Myers thinks it was worth every minute of work and every dollar spent to make it as original as possible. He sees it as a testament to an American icon. This is not the earliest CJ-2A known to exist. The third civvy Jeep exists but is a rockcrawler (hold your laughter, please, built-not-bought guys), but the fourth is still original, and there may be 30-40 '45 CJ-2As remaining in total. If you want a restoration challenge, a '45 or early '46 will provide it. 



This Jeep was ordered with a rear PTO, though this isn't the original one to the Jeep. This one has a 90-degree adaptor with a drum for a typical farm belt drive. The early ones, like this, were made of wood, which provided better belt grip over the iron drums but wore out and rotted. Jeep rated the PTO drive for about 30 hp, and at that rated output (2,100 rpm), the engine used 3.3 gallons per hour. The PTO could be used stationary or with the Jeep moving. Also original is a single rear taillight and only a reflector on the right side.



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"DON'T GET LEFT IN THE DARK"

Smittybilt's roof top tent

By Ali Mansour

jpeditor@jpmagazine.com

Photography: Ali Mansour

Camping and wheeling go hand in hand. For many, it's all part of the off-road experience.

Whether it's for a few days or a week, disconnecting from your daily routines for a little camping trip should be on everyone's to-do list. Over the years, our camping accommodations have ranged from a blanket in the backseat to a full-blown multi-person tent.

When we first started building our '07 Jeep Wrangler Unlimited Rubicon, we fully intended to use it as a base camp and adventure machine. Over the past year, we've done just that. Finding that we are camping more than ever before, we decided to check out some better sleeping arrangements. Since we already

jokingly refer to the '07 JK project as the Ali-Lander, we thought we might as well look into one of the overlanding essentials—a rooftop tent.

The idea of a rooftop tent might seem odd, but what we've found is that it's fairly practical. The concept is simple: You have a quick and easy tent to set up; it's off the ground and away from critters and your stumbling campmates; and you don't have to worry how rough the ground is below. For ours, we decided on one from Smittybilt.

One of the attractions to Smittybilt's Roof Top Tent (RTT) was the fact that it's substantially less expensive than some of the others on the market but still includes many of the same features and materials as the pricier models. The setup includes a 2-inch-thick high-density foam mattress that easily sleeps two adults, a 600D heavy-duty rainfly (which we found works great!), mosquito netting, and an assortment of compartments and openings. Weighing right around 118 pounds, it isn't exactly something you're going to toss atop your rig by yourself. However, it's no more difficult than taking a hardtop on and off.

Once it was bolted in place, we've found it only took a few minutes to set up. With that being said, you may look like a spider monkey as you scoot around the roof of your Jeep to get the rainfly and all of the awnings secured. The more times you use it, the more efficient you'll become. The taller you are (or the closer your rig is to the ground), the easier the process will be.

In terms of the tent quality, it's probably one of the nicest we've owned. We are habitually cheap when it comes to buying tents, which is probably why we can't seem to make them last. There are a few spots where the fabric stitching could be a little better, but overall, we've been very pleased with the fit and finish. One of the first things we usually kill on lower-end tents are the zippers. Thankfully, this hasn't been the case here.

Speaking of zippers, there are a lot of them. The ceiling, sides, and main openings can all be unzipped to make for an extremely airy setup. It also has a built-in LED light and a power cord long enough to plug into the auxiliary power port on your Jeep. This is an extremely helpful feature at night. We just wish the steps had a little illumination too.

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The fact that it's physically connected to the Jeep has been the biggest benefit. We can now camp places we normally would not have considered before, which makes for a more exciting and remote experience. On the flip side, having this much weight and bulk up top has been noticeable. The rack and top let you know they are up there. This was mostly noticeable because of the increased wind noise, but the weight was definitely something we felt on the trail. If you daily drive your rig and your commute consists of long highway jaunts, we strongly suggest keeping the tent in the garage until you are ready to use it again.

We were a bit skeptical about getting the Smittybilt RTT (especially for \$800) at first, but we've found that it makes camping surprisingly simple, and it's especially nice not having to sacrifice any interior space for a tent. If you're serious about camping, we strongly suggest checking out the roof top tent options. For the price and quality, we are very happy with our Smittybilt RTT. It's not for everybody, but it's a worthwhile investment for those who are serious about setting up camp in comfort far beyond the normal campground.



There's very little setup to the RTT as it arrives largely pre-assembled. Once you determine if you want the tent to open to the side or to the back of the vehicle, you'll attach the rack-mounting rails to the base of the tent. Using a friend to help hoist the 118-pound tent atop the Jeep, we bolted the track clamps to the roof rack's tubular crossbars.



Once you unfold the tent, you'll have a handful of poles to insert that hold up the exterior awnings. These are especially nice when the weather turns nasty. To date, we haven't experienced any wind-related issues that would've caused them to falter.



Inside, there's plenty of room for two adults. There's enough space for a gear bag or two and to change comfortably. Almost every part of the tent that can unzip has mosquito netting, which really helps to keep the tent cool and bug-free. We are sticklers for comfort and found the 60mm foam mattress were more than adequate for a good night's rest.



Smittybilt's Roof Top Tent (RTT) is designed to bolt up to a variety of roof racks. We are running a Smittybilt SRC series rack on our Unlimited JK, which is load-rated for up to 300 pounds. This is more than ample for the weight of the tent and occupants.



Learning to climb in and out of the tent is definitely an adjustment. We had to opt for the ladder extension since our JK was lifted. At night, it can be a little tough climbing down in the dark, so keep a headlight or flashlight nearby!



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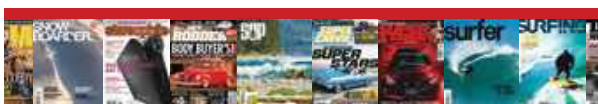
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Included with the tent is a thick waterproof cover. Despite making a bit of wind-related chatter, we haven't had any trouble with the cover. Putting it on is a little challenging for those with a shorter reach, so it's not a bad idea to bring a small step ladder with you.



One item we opted for was the Smittybilt Overland Tent Awning. At a touch over 8 feet long and 6 feet wide, it spans the entire length of the JK's roof rack. A shorter version is also available for those looking to do a similar setup on a two-door.



Similar to the RTT, the awning isn't rack-specific. The two brackets that clasp the awning to the JK have enough length and optional mounting holes for a variety of applications.



Source

Smittybilt, 888/717-5797,
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While setting up the tent is an easy one-man job, we found it helpful to have a second set of hands to toss up the awning. Thankfully, both can be completely set up in just a matter of minutes. **Jp**



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WILLYS ON THE JOB

Willys Jeep Rally showcases old iron hard at work

By Jim Allen

jpeditor@jpmagazine.com

Photography: Jim Allen

Jeep rallies occur all over the fruited plain, but we can't think of one quite like the

Willys Jeep Rally in southern Ohio. Typically occurring in the spring of the year, it has the elements found in just about any other Jeep rally: It features a show-n-shine, parts vendors, a trail ride, presentations by Jeep experts, and the chance to create a focal point in the Jeep universe with like-minded people. It has one other thing most Jeep rallies don't: working Jeeps at work.

If you didn't know that the first civilian Jeeps were built primarily as work vehicles and not for recreation, then

you've been skipping Jeep class. When civilian Jeeps first hit the market in 1945, only a tiny percentage of people used a Jeep for the types of recreation we do today. The majority of Jeep buyers put them to work, and an entire aftermarket existed to build the tools and accessories needed to create the vehicular equivalent of a Leatherman multitool. Remember, these were the days of everything to everyone, when a department store like Sears had everything needed for modern life, from socks and underwear to a car. Along those lines, a plethora of products existed to put your Jeep to work in ways not seen today. Today we use specialized tools and vehicles for most jobs. Back then you could be out shopping in your Jeep today and plowing the fields tomorrow.

The Jeep collection and restoration hobby has been active for a long time, and once the community got bored with seeing row upon row of restored Jeeps on display, they began looking in other directions. All it took was a quick look back into the history books to see the new direction. Before long, the long-lost

In the foreground, the red '53 CJ-3A is running the conveyer belt via a rear PTO and a shaft. The Pasture Green '46 CJ-2A half-cab in the background is running a '40s McCormick 10C hammer mill via a rear drum PTO and a belt to turn corn cobs into feed. Belt driven implements were common in agriculture from the first steam-driven power sources of the 1800s to well into the 1950s. Several companies offered drum PTOs for Jeeps but 10-spline, 540-rpm shaft drives replaced belts in most applications. In 1953, the University of Nebraska-Lincoln, home of the Tractor Test Lab, tested a '53 CJ-3A Farm Jeep, and it produced 35.23 belt horsepower at 2,400 rpm.



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WILLYS ON THE JOB

accessories of old began reappearing on restored Jeeps. Those working Jeeps from back in the day that had survived their lives of endless toil were dragged out of the woods and restored. These unusual rigs made great eye candy in shows, but the next step in this evolution was to put them back to work.

It took a while for the organizers of the Willys Jeep Rally to find a place where working Jeeps could be celebrated with working Jeep demonstrations. However, the Hueston Woods venue has proven to be the ideal headquarters for the event. The 3,000-acre Hueston Woods State Park, near College Station, Ohio, has a great lodge with plenty of space for the show and recreational opportunities for guests. Most important is the nearby John Ittel farm, where the demonstrations take place. Ittel is a well-known collector of working Jeeps, and his large farm has plenty of room for the demos, plus enough acreage for a vintage Jeep trail ride.

About 100 Jeeps were on display or being demonstrated, and there were a lot of visitors walking through the static display at the lodge and taking the shuttle to demonstrations at the Ittel farm a few miles away. The Fat Boys Jeep Club and the Miami Valley Four Wheelers helped with the event. If this sounds like fun to you, or you have a working Jeep you want to show off, get ready because the 2016 Willys Jeep Rally is slated for June 3-4, 2016. See you there!

John Ittel (white hat, hands on controls) demonstrated the use of a '50s vintage Model GW-125 Jeep-a-Trench from Auburn Machine Works. The Jeep-a-Trench came in several varieties over the years. This one could cut an 8-inch trench up to 5 feet deep. The unit combined gear and hydraulics to run the digging ladder, the auger-conveyer, and propel the Jeep slowly forward or backward. The unit weighs about 1,800 pounds, and the kit included overload coil springs. Required Jeep options were a front PTO, governor, heavy-duty rear springs, 265-pound front bumper weight, and 7.00-15 tires. These units tended to be very hard on the Jeep chassis so intact survivors are uncommon. This one is mounted on a '60 CJ-5.



Here is an all-star vintage lineup. Mike Mark's restored Potomac Gray '48 CJ-2A is in the foreground, complete with a rear PTO, chaff screen, and front weight. And yes, the red seats are factory! At the far end is Art Contoni's low-mile, unrestored '48 CJ-2A, also with a front weight, chaff screen, and rear PTO. In the center is Don Hartzell's Normandy Blue '46 stick shift.

When the 75 hp F-134 engine was introduced in 1950, everyone wanted to swap out their flatheads for the more powerful F-head. On the low hood jeeps, the problem was clearance because of the overhead intake valves. Some hackmeisters simply cut a hole in the hood. Others used shorter carbs (the short Holley from the Ford 144ci six was common) or oddball air filter arrangements. Some went with a sidedraft Carter. There was a vintage kit to install a sidedraft Carter YH carburetor on F-134 engines. We're not sure who did the kit but have seen several. So far, the commonality is they all seem to have been found on Jeeps from Colorado. We have a feeling the late, great Mile-Hi Jeep Club in Denver might have had a hand in them. The YH was used in triple form on the '53-'54 Corvette Blue Flame Six and was seen also on the turbo Corvair. Doug Timme's '48 CJ-2A was converted to an F-head long before he restored it, and he decided to leave the vintage conversion in place.



Vendors were on-hand selling everything from arts and crafts to NOS parts, and there was also a swap-meet area.



Well known Jeep and AMC historian and author Patrick Foster was on hand to sell and sign books, as well as give a presentation on Jeep history at the banquet.





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WILLYS ON THE JOB

Johnny Morris and Zack Sheppard from Beckley, West Virginia, were selling a staggering array of NOS Jeep parts from WWII into the AMC era. Brand-new cylinder heads still in paper, new GPW connecting rods, and gasket sets still in the W-O boxes were only a few of the NOS goodies to ogle.

Watching Jeep machinery at work is how to gauge your level of Jeep-geekness. If you enjoy watching John Ittel make holes with a '50s-era Danhouser posthole auger on a '53 CJ-3B, then you classify at least to Jeep-geek Level 2. If you'd rather do anything else, including watching paint dry, Jeep-geekness isn't one of your problems. The restored '53 CJ-3B is using the auger on a rare Stratton three-point hydraulic lift. And since everyone always asks, those are tires from a skidloader.



One of the perennial favorites of the show is Rick Riley's unrestored '66 CJ-5 with a Go-For Digger. It worked at a mine in Wyoming before landing a spot in Riley's extensive collection of Jeeps. The fun part is that Riley lets you try it out, which is fun to do and watch. The Digger conversion included a narrowed Dana 70 DRW rear axle, a lot of frame support, an 11 gpm pump, and a front blade for filling in the trenches.



Young Michael Verst will not soon forget his chance at the controls of the '66 Go-For Digger. Likely, it will be something he tells his own children about someday. Think of Alan Jackson's 2002 song, *Drive*.



By the time this '63 CJ-5 was built, Jeep had moved past pushing the agricultural pursuits hard, but the pieces to do so were still available. Even with only a one-bottom plow and mellow ground, the Jeep is working pretty hard. In about 15 minutes of steady work, the diffs get hot enough to be uncomfortable for an ungloved hand.

The white '63 CJ-5 mounts a Newgren hydraulic lift, a design that fit completely under the Jeep. A Newgren single-bottom plow is being used. In the right soil, a two-bottom plow is possible, but that's maximum effort for Jeeps, generally speaking. Jeeps never made good tractors, and the work is very hard on the drive-train in the long term. When properly adjusted, you can cut an 8 to 10-inch-deep furrow.



This '63 CJ-5 mounts a Stratton hydraulic lift, another of the designs that fit under the body. It's using a blade of unknown manufacture to smooth plow furrows from the previous demo. This could be used by a rural landowner to maintain a dirt or gravel road, and this is one job where an old Jeep can still be useful. Some of Ittel's Jeeps are set up with hydraulic lifts in back and snowplows up front, which could make for a very useful Jeep for a person in the country.

WILLYS ON THE JOB

Ittel's Michigan Yellow '46 CJ-2A has a lot of neat options. The half cab is one of the better and more weather-tight designs but was only offered for a couple of years early on. It also mounts a Monroe hydraulic lift, which is carrying a '50s-era Cherokee hydraulic mixer. The Jeep's Hy-Vo hydraulic pump is also running a hydraulic motor on the auger that is transferring shelled corn from the grain wagon in the background to the mixing drum or the trailer via the hose Ittel is moving. The duals were an aftermarket kit for providing more stability for hydraulic lift-equipped Jeeps.



Ittel's white '63 CJ-5 is running a belt-driven '30s-vintage Wisconsin Pulverizer and turning rocks into gravel. This is how a guy could make his own gravel for a road if he had the time and the Jeep. The Jeep was actually working pretty hard here.



The various aftermarket hydraulic systems could power a variety of machinery, including tools like this '60s-era Von Runden chainsaw. Ittel has had it on static display at previous shows but got it operational and demonstrated it for the first time in 2015. Here, two lumberjack wannabes saw through a log to the delight of a small, but admiring, crowd. The Von Runden hydraulic chainsaw runs from a rear PTO-driven pump (green color) attached to a splined rear PTO. This CJ-3B is also running a Newgren hydraulic lift and Newgren bucket scoop.



When Tom Ogle started as a letter carrier in 1980, he drove a '76 DJ-5 Postal Jeep just like this. What did he do when he retired from the Postal Service in 2012? Buy a '76 Postal Jeep and restore it. His display, with him wearing period Post Office attire, was one of the more popular and fun at the show.



The '64 CJ-6 is towing an Allstate single-wheel Jeep trailer full of corn and also carrying a Hesse Hornet air portable compressor. The compressor uses a Jeep L-head engine in which cylinders one and four provide the horsepower and two and three are adapted to make compressed air. It uses an extra-heavy flywheel to help balance out the pulses but it only runs a little more than 1,000 rpm. This is a Hornet Model H unit that could supply 33 cfm at 120 psi running at about 850 rpm. We have one '50s vintage brochure that indicates these were often used in the tire industry on service trucks.



John Ittel made a mild, but fun, trail on his farm that covered 6 miles and took about an hour to run. OK, it wasn't hardcore, but it was the best the area had to offer and wasn't too tough for the old Jeeps.

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WILLYS ON THE JOB



You don't often see restored military Jeeps on trail rides but it's always a treat when you do. Alan Johnson's '43 is no hanger queen, having driven the entire distance of the Alcan Highway towing a trailer in 2012. He obviously isn't afraid to get it dirty either.



Alan Johnson's '43 Willys MB is a veteran on a couple of fronts. The less obvious is that it participated in the 2012 MVPA (Military Vehicle Preservation Association) Alaska Highway Convoy, which covered 4,100 miles. Johnson used this trailer as a home away from home, and we think he also camped out at the Rally.




Harold Harrison's early Willys Ratrod Pickup got our attention. We particularly liked the nice bodywork on the grille that gives it that steam locomotive cowcatcher look.



Well, yeah, it does have a Hemi. It's a '50s-vintage 392ci Chrysler Hemi V-8 that's been massaged a bit. Bill and Penny Hixenbaugh did a spectacular resto-mod on a '56 Wagon, and they drive it a lot. The Hemi hands power off to a built 700R4 and a Ford 9-inch rear axle. It's wicked fast!



Don Hartzell enjoyed stretching his '46 CJ-2A's legs a little on the trail ride. This is the first time this Jeep saw dirt after a two-year restoration. It's a mid-year production stick shift '46 with a largely unknown history prior to being used for many years as an ornament in an Indianapolis bar. Hartzell also has a '42 Ford GPW and a '44 MB. 

Sources

Wilys Jeep Rally, mw-willysjeep.com

Hueston Woods State Park, visithw.com



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CATCHING UP (WITH KATIE)

Fix it: Now or next week

By Katie Jansma

jpeditor@jpmagazine.com

Photography: Levi Jansma


If you own a JK, I'm pretty sure you have already found out just how deep

your pockets need to be. The one thing that all JK owners (OK, at least 95 percent of us) have in common is that no matter how you build up your Jeep, it can be a big money pit.

However, the "Jeep life" can seem expensive for someone who has bought parts for an '86 CJ-7 and an '07 and '12 Jeep Wrangler Rubicon. There can be a huge difference between the CJ and JK and whether it's a Mopar part or an after-market part. To the best of my memory, building up the CJ-7 cost me roughly \$6,000. Being a mother and, let's face it, an adult, I have other things that cost me about as much money as my Jeep habit. Some of them are all those dang fundraisers at my daughter's school!

One of the things I look for when I'm planning an upgrade to my JK is whether I can buy one thing at a time or if I have to drop the full amount right away. There are some companies that allow you to pay bit by bit. It took me two JKs, a whole lot of research, and some amazing new contacts to figure that out. There are some things that are worth waiting two weeks for with no running Jeep until the next paycheck comes. One of those things is getting your steering box upgraded.

Having two JKs has taught me a lot more than I would have guessed. What I mean is that now I notice the little things, such as the difference between how it feels when steering the Jeep on- and off-road with 35 or 37-inch tires. If you have a set of 37-inch tires, then you know what a pain in the biscuit it can be to turn those huge tires when you're on a rocky trail, especially when your spotter (spouse) gives up and walks away because he (or she) thinks you aren't listening.

So one of the most important things I did recently was get a Hydro-Assist kit from PSC Motorsport for my JK. Even better was the fact that they worked with me and let me buy one part at a time. With the help of my husband and brother-in-law, who basically lifted and held it in place for me while I bolted it up (it was really heavy and nearly impossible to do by yourself), my JK now has a new and more powerful steering system that's strong enough to let me turn those 37-inch tires and point them where I want in any terrain. 



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NEW PRODUCTS

By John Cappa
jpeditor@jpmagazine.com



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Pro Comp introduces the Reflex 86 wheel. The Reflex is available in 17 and 20-inch diameters that fit most common lug patterns. There is a gloss-black version with precision-milled accents and a version with a black lip and machined spokes. The Reflex uses a concave eight-spoke design with a squared lip. Each wheel is made of counter-pressure cast aluminum.

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Hood Clamp

Drake Off Road now offers the RockLaw Hood Catch System to eliminate the hood flutter that is common on '07-current Jeep Wranglers JKs. The RockLaw features die-cast construction so the hood catch will never stretch or deteriorate like the factory rubber units. Each RockLaw is height adjustable to allow for precise and secure setting of the hood position. They feature a customizable style window for installation of optional aluminum inserts. The latch mechanisms are finished with a UV-resistant semi-gloss black powder-coating and come with stainless steel mounting hardware. **Information:** Drake Off Road, 855/372-5367, drakeoffroad.com



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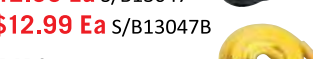
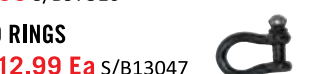
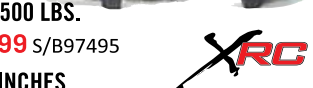


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JEEP SHOTS

By Ali Mansour
jpeditor@jpmagazine.com



Two-In-One

Brian Landers and his son, Spencer, used two tubs and plenty of man-hours to create the '46 CJ-2A you see here today. Aside from getting the original drivetrain in running order, the other modifications include 29-inch Super Swamper tires, Pertronix ignition module, and a welded rear differential in the Dana 41 housing. Given that this started out as a \$250 rig in bad need of repair, we think the two did an excellent job not letting this classic become another rusted relic.



Special Delivery

Robert Sosh of Owensboro, Kentucky, has created on heck of a unique postal Jeep. What started off as a '60 DJ-5 is now a completely custom machine. The all-tube chassis supports a 421ci small-block V-8, which is followed by a TH400 transmission. The original rear axle was replaced with a Dana 60 with 4.11 gears and a locker from Auburn. A custom four-link suspension allowed Sosh to achieve the low ride height. Inside, you'll find seats from a Ford 9N tractor and gauges from Auto Meter.




Ferrari Jeep

The '48 CJ-3A pictured here belongs to Paul Ferrari. Powering the classic rig is a carbureted 4.3L Chevy V-6, which is backed by a TH350 transmission. The Dana 300 transfer case was plucked from a '72 CJ-5. A Dana 30 front was stuffed with a Power-Lok differential and outfitted with Warn hubs. The Dana 44 out back gets propulsion through a Tom Wood's drive-shaft. Other mods include a power steering conversion, Warn 8274 winch, 2-inch Rancho lift, onboard air, and 33x12.50 Goodyear MT/Rs.



BC LJ

Justin Trevor of Kelowna, British Columbia, Canada, submitted his '05 Jeep Wrangler Unlimited. Up front, a custom long-arm suspension secures a high-pinion Dana 44 front axle that is packed with RCV axleshafts and a Yukon Zip Locker. The Dana 44 rear gets help from a Spartan Locker. Both axles carry 4.56 gears. The 4:1 transfer case ratio further increases control of the 36-inch Super Swamper IROKs, which are bolted to Trail Ready beadlocks. The rattle-can paint job was done to make for easy touchups after a rough wheeling weekend. 

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YOUR JEEP

By John Cappa

jpeditor@jpmagazine.com



Top Question

I'm looking for some advice on a decent replacement soft top for my '04 Rubicon. My dad has a '97 Wrangler Sport. He buys used tops and has gone through three of them in 10 years. Would it be worth it to call the dealer and get a new one?

Lisa-Marie
Via email

Buying used tops is one way to save a few bucks. However, you have to realize you are often buying a used top that has already given up some of its life on another

Jeep. The good news is that you have other options besides the Jeep dealer when searching for a quality soft top. If you are looking for factory materials, check out Bestop (bestop.com). The company builds the factory soft tops for Jeep. If your hardware and bows are in good shape, you can simply purchase the Replace-A-Top kit. This kit can save you some money by allowing you to reuse your hardware and bows. The included all-new fabric and windows replace your weathered parts. You have several material options. The heavier Sailcloth fabric is one of the best top materials you can buy.

Companies such as Rugged Ridge (ruggedridge.com), Smittybilt (smittybilt.com), and others also offer replacement Jeep tops as well.

Long and Short Of It

I just purchased my dream Jeep, a '06 Rubicon TJ. It has a 9,000-pound winch, a swing-away spare-tire carrier with dual gas cans, 29½-inch Goodyear tires, a Radio Shack CB, an Optima YellowTop battery, and an unknown vintage wine cork plugging a hole in the firewall. Future plans include a daily 5-mile commute to work and exploring local trails like the Rubicon and Fordyce on 33-inch mud-terrain tires. Would you please



educate me on the pros and cons of a short-arm versus a long-arm suspension lift? I respect your opinion because of your cumulative experiences and vast knowledge of all things Jeep (blatant butt kiss to get an answer).

John Toups
Reno, Nevada

Clearly I'm not immune to a proper butt kissing. The choice of going with a long-arm or short-arm suspension lift typically depends on several factors, including the Jeep model you are working with. On a daily-driven TJ Wrangler, it's acceptable to stick with a short-arm kit when lifting your Jeep less than 3 inches. Any more lift than this and the Jeep will not perform as well as it could on- or off-road. When you get into the taller lift heights, the increased angle on the shorter link arms can cause erratic on-road handling and instability on the trail. If you decide to go with a lift kit of more than 3 inches, I think you'll be happier with a long-arm suspension kit. The longer suspension arms will have less angle on them at static ride height and allow the axles to cycle more smoothly and predictably over rough terrain on- and off-road. Don't forget to add the proper steering and track bar corrections to match your chosen lift height.

Chattering Driveline

I have a '94 YJ with a Ford 5.0L. The engine is mated to an NP435 manual transmission and an NP203/205 doubler transfer case. The front axle is a high-pinion Dana 60 and the rear axle is a 14-bolt. The transmission and transfer cases have been rebuilt. The problem is that I have a loud gear chatter while coasting. If I put the rear output in Neutral and only drive the front

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wheels, there is no chatter. I used an angle finder and it shows the rear driveshaft is at 32 degrees. The rear axle is tilted up to just under the rear output at the transfer case. This chatter is driving me crazy enough to want to pull out the doubler.

Clayton Thomas
Via email

It sounds as though you may have added the doubler without changing the rear pinion angle, which could cause the problem you are describing. A 32-degree driveshaft angle is pretty steep if it's the

actual working angle of the upper driveshaft joint. The low-slung pinion on the 14-bolt certainly isn't helping your situation. I suspect the chatter is coming from the rear driveshaft. I assume you have a double-cardan CV-style rear driveshaft. If you don't, then your driveshaft angles are way off and you'll need one. You'll need to measure the angle on the rear output yoke and the driveshaft angle to calculate the actual U-joint working angle. In most cases, the rear output yoke is either at 0 degrees or angled downward slightly a few degrees. But first you need to make

sure the rear pinion angle is correct. With a CV-style driveshaft, the rear axle yoke should be pointed directly at the rear output yoke on the transfer case and inline with the driveshaft. It can be aimed down a degree or two to compensate for axle wrap if you have a leaf spring suspension. If all the angles line up and you still have a 32-degree U-joint angle, you're going to have to lower the transfer case and or lower the suspension. This will help improve the driveshaft angles and make your Jeep more streetable. A U-joint operating angle around 15 degrees is much more ideal for a street-driven CV jointed driveshaft. The maximum angle for a typical CV joint is around 30 degrees, meaning it should only reach that angle when the suspension is fully extended. Some modified aftermarket CV joints can extend past this angle; however, their working angle is still limited to less than 30 degrees. For more info on acceptable angles and other driveshaft tech, check out Tom Wood's Custom Drive Shafts (4xshaft.com).



Flatfender Power Steering

Do you have any detailed pics of how you mounted the steering box on the Garage Project GPW flatfender? Did you completely remove the front crossmember located under the radiator?

I have been running a Toyota Land Cruiser steering box, but after making some mods to the ride height, I needed to switch to a Saginaw box. I've never really liked the look or idea of the steering box out front and vulnerable. Thanks for any help or hints.

Josh Wilkins

Via facebook.com/JohnCappa4x4

The Saginaw power steering conversion has been done on early Jeeps for many decades. The relatively compact and durable steering box mounts to the inside of the frame, just behind the bumper. It allows plenty of room for the axle and steering linkages, if it's located properly. This can be quite a task on a flatfender Jeep. You don't have a lot of space to work with. Moving the steering box even 1/4-inch in the wrong direction can lead to fitment issues. Because of the tight constraints on a flattie, I often joke that something as simple as an incorrect steering box location can alter where your rear axle



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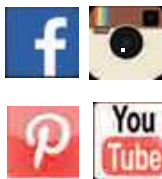
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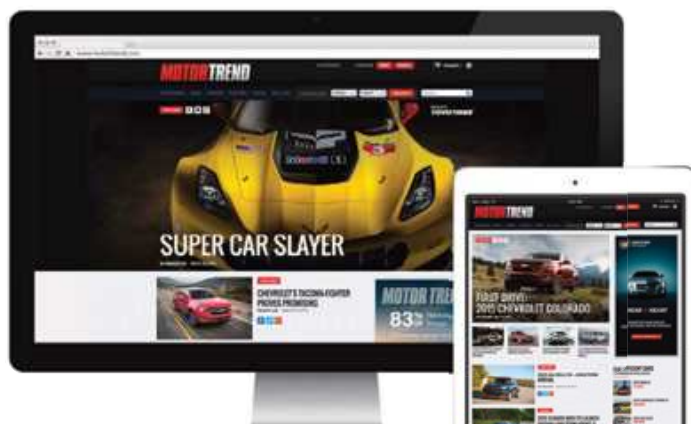
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needs to be located. Take your time, cycle the suspension, check for clearance all around the steering box, and map out the steering shaft routing before permanently welding anything to your frame.

The Saginaw steering boxes used for this conversion are extremely common. They can be found on many '60s, '70s, and '80s GM cars, as well as fullsize Jeeps, among other applications. The steering ratio will vary depending on the application. Some boxes will provide a quick 2½ turns lock-to-lock and others, like the FSJ boxes, will be closer to 4 turns lock-to-lock. If you prefer a slow-ratio box, look to the larger GM cars and FSJs.


Don't be too concerned about the steering box being vulnerable on the front of your Jeep. They are very sturdy and can handle being banged around a bit. For more abusive rocky applications, you can easily fabricate a small skidplate that extends back from the front bumper.

Advance Adapters (advanceadapters.com) offers a complete power steering swap kit for early Jeeps, but you won't be able to use most of the parts if you have swapped out the factory front axle and steering linkage. The Advance Adapters weld-on four-bolt Saginaw steering box mount is available separately for those applications under PN 716838.

If you don't like the steering box way out front like on a Saginaw box application, Herm the Overdrive Guy (hermtheoverdriveguy.com) offers a really innovative power steering conversion kit for early CJs. The kit places a reverse-rotation Ford steering box on the inside of the framerail between the motor mount and radiator. Space will be at a premium in this area, and the conversion will not work with the stock four-cylinder engine. Exhaust clearance around the steering shaft will be tight but still manageable on V-6 and V-8 engine swaps. A low-slung suspension may cause clearance issues because the steering box is essentially placed right over the front axle.

On the Garage Project GPW, I simply used heavy-wall DOM boss tubing for mounts. I welded the bosses directly to the frame with three passes on each joint, which is certainly overkill. I've also done this in the past on taller frames by using a hole saw to pierce the framerail for the DOM bosses to pass through before fully welding them in place. It's a little more difficult to mock up than using the Advance Adapters mount, but it's likely the strongest way to attach a steering box to your frame because it distributes the load.

In the past, I have completely removed the large factory tubular CJ front cross-member and replaced it with a smaller diameter tube. This time around, I left it in place and notched it for steering shaft clearance. On the very forward upper boss, you'll need a ¾-inch-thick spacer. There was a bit of a gap under this forward mount and I didn't want to fill it with weld, so I simply welded in a small 1.75x2-inch piece of strap steel to the frame prior to welding the bosses in place. You may or



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may not need to do this depending on how you locate your steering box.

JK Lock or Not

I own a stock '10 JK Sport with a six-speed manual transmission and factory axles. The Jeep has 3.21 axle gears and Rubicon tires and wheels. I would like to upgrade the axles with lockers, but the Internet experts have told me that I will destroy my axles if I do this. I know that there are no guarantees in life, but what is the realistic thought on this?

Bill Crozier
Via email

It's really too bad that there aren't more Internet police. A lot of misinformation can be spread online in a short period of time. Someone always has a cousin whose friend did XYZ and the result was horrendous. The reality is that the original axles in your Jeep are very durable considering the factory application. However, when tire size gets to 35 inches or larger, the axles can have some problems, depending on how and where you like to drive. If you plan to stick with the Rubicon-sized tires and drive sanely, you can very easily add lockers to the front and rear axles of your Jeep without any reliability issues whatsoever. If you plan to beat your Jeep within an inch of its life on the nastiest rocky trails you can find, you might have issues. The fact of the matter is that you can break anything. The key is driving within the capability of your vehicle.

You can decrease the potential wear and tear on your axles by installing selectable lockers and only using them when you need them. A selectable front locker should be disengaged when turning sharply. This will decrease axleshaft stress and allow you to turn sharper than if you leave the front locker engaged. Selectable lockers will also keep your Jeep's stability control system happy on-road, where full-time mechanical lockers could cause the ABS and traction-control dash lights to flash in certain situations. **Jp**



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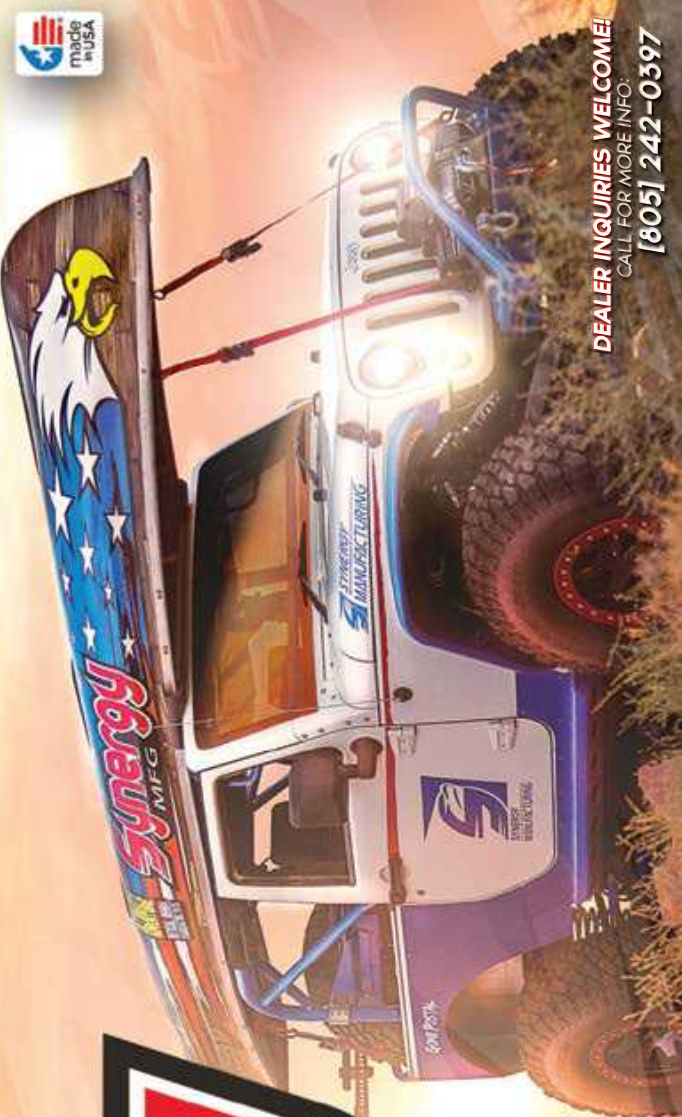
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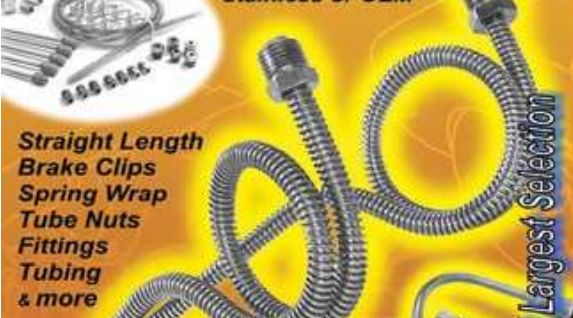


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By Tori Tellem

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Jeep Peeps Edition

Keep on sending us more of these as well as vintage/military Jeeps and

carnage/breakage/Sideways ones! Don't forget the most important parts of all: who is in the photo (first and last name), where it was taken, what year/type of Jeep, and any other fun backstory info. And tell us who you are and where you're from, if you're not the one in the photo. Make sure the photo is high resolution—no less than 1,600 by 1,200 pixels (about 2 megapixels) and a JPG (maximum quality), BMP, or TIFF file. No PDFs. Email the photo and story to jpeditor@jpmagazine.com with the subject line "Sideways."

Transplanted Jeoper

"It took Fiona MacClure changing countries—she's originally from Scotland—to discover her Jeep obsession," explains Steve Collins of Oakville, Canada. "After owning three TJs over the years, it was time for her first new vehicle: a '15 Wrangler, of course."



16 + 2 + 99

This is Chloe, and proud pops Joshua Hewlett sent in this snap of her with his two '99 Grand Cherokees. However, playing off-road is on hold for a moment because the maroon Jeep has rust and the silver specimen has a bad engine. "This is the day we started the engine swap, and she was very disappointed that it would be the last time she would drive the maroon one, as it was what she learned to drive in." Ol' Silver is due for a 6½-inch lift kit and 35-inch rubber.




The Blue Dragon (Not Her)

Robert Dee sent us this pic of his '73 Wagoneer, the Blue Dragon, posed with his very own Jeep girl, his wife Ashlee. The Jeep is mostly stock. Dee told us, "After helping me buy my YJ in high school, she wanted her own Jeep, so we got her the FSJ. She wheeled the Rubicon while pregnant, wrenches on her Jeep, and actually wants Jeep parts for presents." Robert said she also buys him Jeep parts for holidays.



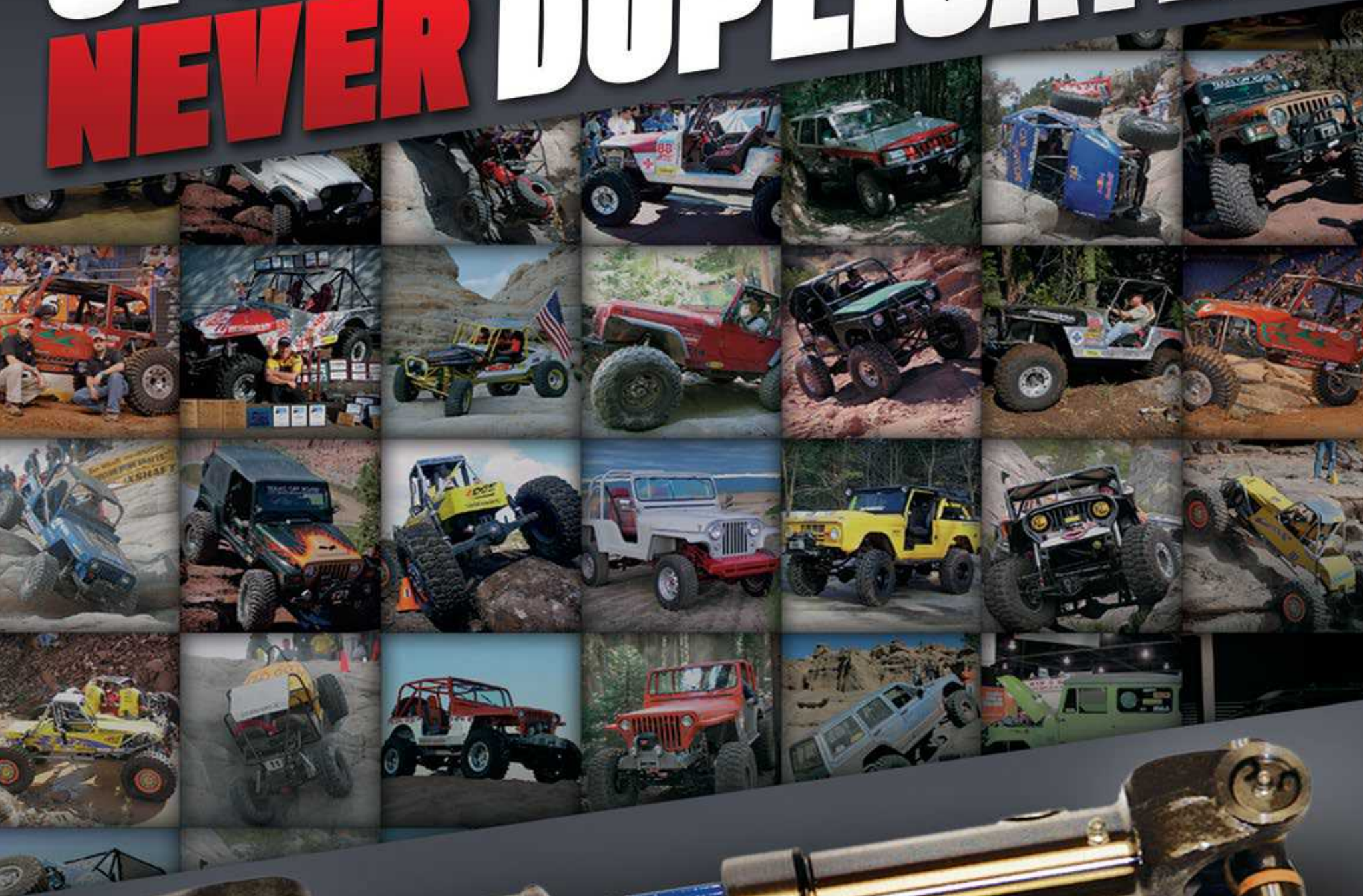
The Sahara By Way of Georgia

"I'm Angela Frady. I have a '97 Wrangler Sahara. Love to go trail riding. I'm in Dawsonville, Georgia." She really didn't need to say more than these precise words she sent to us. 

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TACTIK Rear shown with VersaHitch®



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